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Ouistreham: view from West End }
West Doorway, Ouistreham } ..... From Photographs.
Public Offices, Hendon ..... Mr. T. H. Watson, F.R.I.B.A., Architect.
Designs for Textiles ..... By Mr. A. B. McDonald.

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The Experimental Bacterial Treatment of London Sewage.

WE have at various times drawn attention to the Reports issued by the London County Council on the bacterial treatment of London sewage, and as these Reports have now been collected and published—in a somewhat abridged form, be it said—in one volume, it may be useful to summarise the results obtained during the long series of experiments from 1892 to the present time. The first experiments were commenced in May, 1892, under the direction of Mr. W. J. Dibdin, but since 1898 the work has been continued by Professor Frank Clowes, with whom Dr. A. C. Houston has been associated in the bacteriological investigations.

From May to August, 1892, experiments were made with different kinds of material for use in contact-beds, but as these experiments are now somewhat out of date, we need only say that Lowestoft shingle of the size of peas yielded the highest degree of purification; coke-breeze, however, proved fairly efficient, and as it is a cheap material, it was selected for the experiments on a larger scale.

In 1893 a large coke-bed (known as "the one-acre bed," although its actual area is 5,067 sq. yds.) was started, and has been in use ever since with but little intermission; in 1898, however, its depth was increased from 3 ft. to 6 ft. The first experiments on the bed 3 ft. deep were instituted for the purpose of ascertaining the rate at which the bed could deal with the effluent from the chemical precipitation-tanks. The rate rapidly fell from nearly a million gallons daily to one-fourth of this quantity; after the sixth week the effluent was putrid, and at the end of twelve weeks the bed was "quite useless, being putrid throughout." After a rest of three and a half months, which sufficed to bring it again into working condition, the bed was tested in a more reasonable manner, and succeeded in effecting a purification of 70 to 80 per cent. on 500,000 gallons of tank effluent per day. Towards the end of 1894, the periods of rest on the six working days were shortened, and work was suspended from 10 p.m. on Saturdays to 6 a.m. on Mondays. The bed was filled as rapidly as possible, allowed to stand full for one hour, and then quickly emptied. During a period of eight weeks the bed treated $1\frac{1}{8}$th million gallons on each working day, and effected an average purification of 78 per cent.

In 1897 experiments were made with sewage "which had undergone previous settlement without the aid of chemicals," and a purification of 81·5 per cent. was obtained. The coke used in this bed was not sifted, and after the depth had been increased to 6 ft., it was discovered that the lower or original portion had become very much consolidated. The deduction is that unsifted coke is quite unsuitable: All the fine particles ought to be removed by screening, and in addition to the screening it is, we may add, a good plan to wash the selected particles thoroughly, so that all the fine dust adhering to them is eliminated.

The next series of experiments was on a smaller scale, and was somewhat unsatisfactory. Crude sewage was passed successively through an upper primary and a lower secondary bed, each of which was 6 ft. deep. Two pairs of beds were constructed, one pair being filled with Kentish ragstone and the other with coke. In each pair the material in the upper bed was passed by a 4-in. mesh and rejected by a $\frac{1}{2}$-in. mesh, and that in the lower bed was passed by a $\frac{1}{2}$-in. mesh and rejected by a $\frac{1}{16}$-in. mesh. The ragstone did not give as good results as the coke, and in both cases the degree of purification was unsatisfactory—49 per cent. for the ragstone and 63 per cent. for the coke. In another series of experiments on similar lines the depth of the beds was increased to about 9 ft. 9 in., but in one pair the primary and secondary beds were filled with coarse material, and in the other pair the primary bed was coarse and the secondary fine. Coke was used throughout—that in the three coarse beds having passed a 2-in. and been retained by a $\frac{1}{2}$-in. mesh, and that in the fine bed having passed a $\frac{1}{2}$-in. and been retained by a $\frac{1}{16}$-in. mesh. The pair with the coarse and fine beds gave much better results than the other pair (76 per cent. purification against 63), but all the beds were gradually being choked by the solid matters in the sewage, and in November, 1900, a new series of experiments was started. The

same tanks were used again, but the coke was removed from the upper tanks, and the crude sewage was allowed to settle in these before being passed on to the lower beds, which were as described above, but with the depth of the coke reduced to 6 ft. The settlement of the sewage was beneficial, but was not carried out in such a manner as to allow much septic action to take place, and the purification effected by the tank and coarse bed was only 51 per cent., and by the tank and fine bed 60 per cent.

All the experiments recorded above were carried out at the Northern Outfall Works, but in 1898 experimental work on somewhat similar lines was begun at the Southern Outfall Works, Crossness. Three tanks, each of which had an area of about 27 sq. yds., were used. In the first series, one of the tanks was filled to a depth of 4 ft. with coke of uniform size (each piece about as large as a walnut), and effected an average purification of 52·2 per cent. when fed with crude sewage twice daily, the tank standing full for three hours. The other tanks were filled to a depth of 6 ft. with similar coke, and were arranged as primary and secondary beds, the crude sewage being treated by contact in the primary bed, and the effluent from this being similarly treated in the secondary bed. The percentage purification effected by the double contact was 68·4. Better results would probably have been obtained if finer coke had been used in the secondary bed. Incidentally this series showed that contact beds must be treated with small doses of sewage until they have matured sufficiently to allow the normal quantity to be applied; otherwise the beds and effluent will become putrid, and the capacity of the beds will be seriously reduced by accumulations of sludge.

In 1899 the depth of one of the beds was increased to 13 ft., and was filled with crude unsettled sewage—once a day from February 27 to March 25, and generally twice a day from March 27 to October 9, except Sundays. The capacity rapidly diminished from 41 per cent. of the capacity of the empty tank on March 9, to 34 per cent. on June 8, and 28 per cent. on October 10, and the purification fell from an average of 53·3 per cent. for the first period to an average of 47·2 for the second. These unsatisfactory results led to a series of experiments, in which the sewage was "very roughly" settled in a wooden tank before being passed into the bed. From October 13 to December 22, 1899, the bed was filled twice a day, and from January 12 (when the capacity was only 31 per cent. of the capacity of the empty tank) to April 5, 1900, three times a day. The purification was 57·8 per cent. for the first period, and 52·2 for the second. The rough settlement of the sewage allowed the bed to treat a larger quantity than when the sewage was applied without sedimentation, and the degree of purification was also higher. A third series, in which the sedimentation was more thorough, did not produce a better effluent, but this was partly due to the fact that the bed was filled four times a day (except Saturdays and Sundays). The process of sedimentation was carried out in a tank, the passage of the sewage through the tank occupying about five hours. The purification was 55·7 per cent. The air in the empty bed was tested, and the results showed that, "even in the case of the deep 13-ft. bed, the air at the lower part of the bed was not seriously deficient in oxygen."

Another interesting experiment with rapidly-sedimented sewage was also made. The whole of the sewage arriving at the Southern Outfall, during a period of three weeks (December 24, 1899, to January 13, 1900), was passed into settling channels 581 ft. long, along which the sewage flowed at an average rate of 7·4 ft. per minute; a portion of the sewage thus rapidly sedimented was then treated in a small coke-bed contained in a tank which had a capacity of 280 gallons. The bed was filled three times a day, and the liquid capacity did not diminish during the progress of the tests. The average purification effected by the whole process was 58·7 per cent.

All the experiments described above were carried out with contact-beds, but from November 7, 1899, to May 26, 1900, one of the old coke-beds, 4 ft. deep, was used as a continuous filter for the treatment of settled sewage. "Various methods of continuously feeding the bed" were adopted, but no details are given. The results were not satisfactory, and the quantity treated was not as great as by the intermittent system.

The last series of experiments at Crossness was begun on November 1, 1900, and differed from the others principally in the length of time allowed for the settlement of the sewage. One of the three brick tanks was used as a septic tank, through which the crude sewage was passed, each portion being about six hours in the tank. A certain amount of septic action took place, and the effluent was then treated in one of two contact-beds 6 ft. deep. The capacity of one of the beds was measured at intervals, and decreased gradually from 32·2 per cent. of the capacity of the empty bed on October 8, 1900, to 23·3 per cent. on January 21, 1901, the bed during this period having received four fillings a day (except on Sundays); on March 7, after a rest of seven weeks, the capacity had increased to 28·9 per cent., but on October 5, after receiving an average of two and a half fillings a day, it had decreased again to 24·2 per cent. The average purification was only about 54 per cent.

Among the conclusions based on the various experiments, the following may be mentioned:—That by suitable sedimentation raw sewage is deprived of matter which would choke the coke-beds, and the sludge which is deposited is reduced in amount by bacterial action to a very considerable extent; that the capacity of a coke-bed fed with settled sewage "fluctuates slightly, but undergoes no permanent reduction"; that the bacterial effluent from coke-beds fed with settled sewage "does not undergo offensive putrefaction at all, even in summer weather"; and that the use of chemicals is "quite unnecessary under any circumstances" when bacterial treatment is adopted. We have our doubts whether these conclusions can legitimately be drawn from the experiments at Barking and Crossness; experiments elsewhere appear to us to have had some influence on the judgment of Professor Clowes.

We cannot pause to consider that section of the Report which deals with the methods employed in making the chemical examinations of the sewage and effluents, and must only briefly indicate the suggested method of dealing with London sewage—namely, *first*, a preliminary screening to get rid of coarse matters only; *second*, settlement in detritus-chambers in which suspended mineral matter would be deposited; *third*, incipient septic treatment in tanks or channels for about six hours; *fourth*, aëration of the septic effluent, which "may be effected by allowing the liquid to fall through a perforated tray, so as to break it up into separate streams"; and, *fifth*, bacterial treatment in contact-beds.

Division II. of the Report is by Dr. Houston, and deals with the bacteriological part of the question, as distinguished from the chemical, which was discussed by Professor Clowes in Division I. We cannot review Dr. Houston's elaborate report in detail, but may repeat his statement that (in view of the results obtained from his tests) "until reliable evidence to the contrary is forthcoming, the *effluents from the bacteria beds ought to be regarded as hardly, if at all, more safe in their possible relation to disease than the raw sewage before treatment.*" The italics are Dr. Houston's, but it is well to draw attention to a new footnote, in which he says that in his report he has confined his remarks "to the results obtained with contact-beds at Barking and Crossness, and [has] contrasted these results, not with other bacterial processes, but with the results obtained from the existing chemical treatment at the Outfall Works." As the effluent after chemical treatment is "seemingly worse bacteriologically than the effluent from the bacteria beds, and much more impure chemically, the inference is that the bacteria bed treatment is to be preferred." Dr. Houston therefore agrees with Professor Clowes in recommending the gradual adoption of the bacterial system for the purification of London sewage.

The third division of the volume contains tabulated information as to the bacterial treatment of sewage, either experimentally or otherwise, at different provincial centres, and eight short papers on the number of bacteria present in sewage and effluents, and on other cognate subjects, are given in an appendix.

The volume as a whole is interesting, but will not be as generally useful as the reports issued by some of the larger provincial towns, such as Manchester. The London experiments were carried out solely for the purpose of ascertaining whether bacterial treatment would purify the sewage to a degree sufficient to prevent nuisance or danger arising from the discharge of the effluent into the estuary of the Thames. No systematic attempt was made to obtain the high degree of purification required in the case of inland towns. Some of the experimental tanks and beds were of a makeshift character. Whether this was due to parsimony on the part of the Council or to the lack of an expert engineer's advice we do not know, but in any case it renders the experiments of

less value. The tests of continuous filters appear to have been entirely inadequate, and the results differ so much from those obtained in other towns that we are inclined to think that the methods adopted for feeding the beds were defective. It is certainly strange that this series of tests was concluded in May, 1900, and that no attempt has been made to test any of the apparatus designed during the last four years. We are not by any means convinced that the experiments as a whole are worthy of the importance and magnitude of the problem to be solved. No great harm will be done if bacterial treatment on the lines suggested in the Report is adopted tentatively for some portion of the sewage, but, at the same time, the experiments ought to be continued, and an engineer may, with advantage, be appointed to work in conjunction with the chemist and bacteriologist.

THE NEW GALLERY.

THE New Gallery is at present occupied by the fourteenth exhibition of the Society of Portrait Painters. We have never been able to understand exactly what is the special object of this Society, unless to find opportunities for the exhibition of portraits which may not easily find room in general exhibitions. It does not especially represent the highest achievement in portrait painting, and certainly does not represent any guiding principle in the art; in fact (and this is perhaps one of its sources of interest) it rather serves to show how exceedingly various are the methods which may be employed and the aims which may be illustrated in portrait painting, from the portrait which is simply and obviously a "likeness," to that which is just as obviously (in the artist's mind) an occasion for a study in colour or in the details of costume. Portraiture is capable, no doubt, of being regarded from all these points of view; the highest being that in which the portrait gives more than the outward semblance—conveys a suggestion of the mind and character of the sitter, combined with a fine pictorial effect; but such portraits are among the rare productions of the greatest painters.

The special feature of the exhibition consists in some examples of the works of the late Herr Lenbach. These certainly come under the head of portraits which are of intellectual interest as expressions of character; and they have moreover most distinct and remarkable qualities of style and execution, especially in the painting of the faces, in which modelling and expression seem to be produced by a kind of suggestion of the brush rather than by any attempt at realistic execution. The most remarkable of them in this respect is the portrait of Moltke, in which the head is a masterpiece of characterisation. From the two portraits of Bismarck, one of them (that of Bismarck *en retraite*, his hands leaning on the top of his stick) well known through engravings, one may judge that Lenbach, like some other great portrait-painters, was a shrewd critic of his sitters, and chose to convey his own impression of their character; perhaps to a greater extent than the sitters sometimes realised, or would have approved if they had. In the two portraits of Bismarck he certainly, so to speak, sits in judgment on the great Chancellor; and it would not be difficult to conclude, from the evidence of the paintings, that he had more admiration for Moltke than for Bismarck. On the other hand, his feeling for colour is not unexceptionable. "Miss Peck and her Cat" (28) is a most remarkable picture in its way, the cat especially being a *tour de force* of brilliant execution (reminding one of Millais' rabbit in a well-known girl's portrait); but the colour is yellow and unpleasing.

It is interesting to compare with Lenbach's the portraits of another foreign artist, M. Gabriel Nicolet. No contrast could be greater. The Frenchman's portraits have not the intellectual force and interest of Lenbach's; but they are examples of a style which is highly finished and consistent in every part, yet totally without hardness or mere prosaic realism. They are not the class of what we call "costume portraits" (of which there are examples in the gallery), in which the painting of the dress and accessories is the main interest, and apparently the main effort of the painter, and the face is of quite secondary value. M. Nicolet finishes every detail, but it is detail subordinated to the total effect, and every part treated in relation to that, and the greatest care is expended over the features and hands. These are not, it is true, what can be called powerful portraits; one cannot get rid of the impression of a certain "prettiness" of effect in them; but they are very consistent and highly finished works of art; none more so in the gallery.

The Society seem to have been obliged to depend somewhat on loans of old pictures; Burne-Jones' portrait of a little boy, "Philip Comyns Carr" (6) is an old friend, as well as some others. Among the most interesting of the new pictures—or what we take to be such—are Mr. W. Strang's "Portrait Study" (21)—apparently the head of Mr. Chamberlain, though not so stated—and Mr. Austen Brown's "A Musician" (34), really a study in colour, and a very interesting one, but the interest is certainly not in the head, which is a weak one and weakly treated. Mr. Richard Jack's "Woman in White" (33) belongs to the same class of studies of effect, in this case not of colour but of pose and composition of lines; a woman seated and nearly turned away from the spectator; a fine piece of drawing. Mr. Melton Fisher's portrait (38) of a young girl in a wide-brimmed hat seated in front of what may be called a Gainsborough landscape (indeed the whole picture is a kind of reminiscence of Gainsborough) is very graceful as a whole, but the face rather flat and deficient in modelling. Mr. Ellis Roberts's large full-length portraits of ladies are obviously and intentionally revivals of the old school of rather theatrical pose in the portraits of ladies, and for the present day have an air of unreality and affectation. Among others to be named are Mr. Collier's of Sir Charles Strickland (54), Mr. Kennington's "Miss Marjorie Close-Brooks" (72), showing a charming head and admirable drawing of arms and hands; and a curious specimen of a full-length portrait by Corot (114: a very early work we should imagine), a French lady in an astounding dress of the period. Perhaps Corot is the very last name that would occur to anyone on looking at it.

In the Central Hall is a collection of sculpture—not portrait sculpture except in a few instances—among which we are glad to see again Mr. A. G. Walker's beautiful group "Sleep," a nude woman and her infant, this time not with a sofa in front of it, as it was placed when exhibited (or concealed) at the Royal Academy. Mr. Derwent Wood exhibits a life-size bronze of "Dante at Ravenna," seated, with a symbolical group of Paolo and Francesca at his feet, and a fine life-size figure of "Diana," described as a garden statue (plaster bronzed); a nude Diana, however, is not in accordance with the traditional presentation of the goddess of the chase, though we remember that Falguière has given a modern precedent for it. There are other interesting works, large and small, among the sculpture collection.

NOTES.

Bath Abbey.

THREE important points are brought out in the report by Mr. Jackson, R.A., upon the condition of Bath Abbey Church. It will be remembered that during the early part of August last the central tower was attacked by lightning, and that Mr. Jackson was commissioned to inquire into the extent of the damage done. Fortunately this was far less than might have been expected, being limited to the upper portion of the south-east pinnacle. Referring to this portion of his inquiry, Mr. Jackson calls attention to the fact that the building is entirely without lightning protectors, and should be provided with a complete system of points and copper tapes in accordance with a scheme now submitted by him. We are really astonished to learn that the authorities have been contented to go on for so many years without taking precautions against lightning that are regarded as absolutely essential by all sensible men. The removal of the shattered masonry, however, revealed a serious structural defect, for it was found that the four pinnacles of the tower had been bonded with iron clamps, which, being exposed to climatic influences, had oxidised so seriously that in some places the clamps had expanded to double the original thickness, thereby causing a corresponding displacement of the masonry. Further examination of the building showed that the north-east pinnacle of the choir was in a particularly dangerous condition, the finial having been broken across, and the two top courses displaced to the extent of 1¼ in. on one side. This investigation serves to demonstrate once more the unsuitability of iron as a material for binding together stone-work, especially in exposed positions. All the pinnacles of the tower, and of the choir, will now have to be taken down and rebuilt with slate dowels and copper rods in place of the iron clamps and ties. A second structural defect discovered by Mr.

Jackson relates to the flying buttresses which, originally having no work to perform, were utilised by Sir Gilbert Scott for resisting the thrust of the nave vaulting added some thirty years ago during the restoration of the church. These buttresses are now being overpowered by the vaulting, and the walls are taking a perceptible outward inclination. Mr. Jackson considers it necessary that the walls should be shored at several points, and that the buttresses should be rebuilt in such manner as to afford adequate resistance. This is evidently a matter of extreme urgency, as the buttresses have been pushed out to a distance of some inches and are in imminent danger of failure. We cannot help feeling that the recent lightning stroke has turned out to be a most fortunate occurrence, for it has had the effect of directing prominent attention to three serious defects which, as decided as a public meeting held in Bath last Friday, are to be remedied without delay.

The Condition of Elementary School Buildings.

THE Education Committee of the Anglesea County Council has addressed a strong circular to the managers of the "non-provided," or voluntary, schools in regard to the state of the school buildings, calling upon them to carry out all "the various alterations, improvements, and repairs" set out in the report of the County Surveyor. The County Council is doing good work in this matter, for every "voluntary" school building should be in a proper state before it becomes chargeable on the county rates. We have no concern with the general aspect of the Welsh education strife, but, as regards school buildings, the County Councils appear to be acting in a strictly legal manner, and the managers of the voluntary schools seem, on the other hand, to be shirking their legal obligations. We are inclined to think that there are a good many English County Councils who are letting the managers of voluntary schools escape their obligations. Bad buildings and insufficient ventilation are hindrances to proper education and conduce to illness and epidemics, and there can be no question that the County Councils should take care that all school buildings are up to a proper standard of construction and sanitation.

Manchester Water Supply.

OWING to the extreme dryness of the summer and autumn of the present year, considerable anxiety has been experienced by the Manchester Water Committee, who have found it necessary to restrict supplies for several weeks past throughout the city boundaries. Very little water is left in the Longden Dale reservoirs of the old waterworks which are still used to supplement the Thirlmere supply. When we saw these reservoirs two or three months ago the water level was very low, and it has since fallen so much that the total storage is barely sufficient to supply the inhabitants of Manchester for eighteen days. Under these circumstances much satisfaction must be felt in that city that the second pipe line from Thirlmere is at last completed and in operation. The conduit in question was designed to carry an additional supply of from ten to twelve million gallons daily. Its completion at the present time is most opportune, and it is clear that the Corporation were well advised in commencing its construction at a sufficiently early date.

Defacement of the Victoria Falls.

ONLY a few years back the Victoria Falls were scarcely known, even by name, to the bulk of the English people. To-day almost everyone has heard or read of them, and since the opening of the railway in June last they have been visited by tourists and travellers from various parts of Africa, Europe, and America. We need not call to our aid the characteristic phraseology of the guide-book for the purpose of reminding our readers of the magnificent scenery to be found at this part of the Zambesi River. Suffice it to say that the vicinity of the falls affords a series of pictures, each with its peculiar charm, probably unrivalled in beauty by any others in the world. The advance of civilisation into such a scene need not be regretted if the enterprising builders of railways, power stations, hotels, and other structures can be persuaded to keep the evidences of their activity somewhat in the background. The first intrusion was the steel bridge, now well on its way towards completion. In itself this structure may constitute no actual disfigurement, even though it will serve to suggest the presence of man in a place where Nature requires no artificial adornment. But the accompaniments of the bridge must be particularly objectionable, comprising as they will ugly embankments of red earth, signal-posts, and numerous unsightly accessories. Already a large hotel of timber and galvanised iron has been built close to the falls, and another of greater dimensions is threatened. What may happen when the utilisation of the falls for power is commenced we do not venture to predict, but unless a strong protest is made by the public against the further disfigurement of a place that will in due course become one of great resort by lovers of Nature, it is highly probable that the Victoria Falls will suffer severely under the ruthless hands of purely commercial pioneers.

Stability of Retaining Walls.

IN a paper read before the Association of Yorkshire Students of the Institution of Civil Engineers, and now issued in pamphlet form, Professor Charnock considers the stability of retaining walls in relation to the overturning action of earth pressure. Various formidable mathematical processes have been devised for dealing with this point, but there are only two fundamental theories, both of them defective as generally enunciated. After pointing out the limitations of these two theories, due to Coulomb and Rankine, respectively, the author refers to a very simple construction published by Rebhann, of Vienna, for determining the position of the plane of rupture for any given inclination of the back of the wall, and for any slope of the upper surface of the earth supported. He discusses also an extension of this method, by Professor Haseler, of Brunswick, which has been largely adopted on the Continent with satisfactory results. Some further modifications are suggested by Professor Charnock, who gives full details of the proposed method of procedure in his pamphlet. Among modern researches on the direction and magnitude of earth pressure, one of the most important mentioned by the author is the series of experiments conducted by Professor Donath in 1891. These experiments, which were conducted with great care and accuracy, serve to show that Rankine's theory is not applicable to the case of a vertical wall with the upper surface of the ground horizontal, and that the magnitude of the earth pressure, as calculated by Rankine's formula, is at least 30 per cent. in excess of the true pressure, whereas Coulomb's theory, if due recognition be made of friction between the earth and the back of the wall, gives a value only about 6 per cent. in excess of the correct value. A calculated example in this paper shows that the method advocated by the author gives a result very nearly coincident with that afforded by actual experiment, and suggests its usefulness as a check upon the empirical methods now generally adopted in practice.

Street Lighting in Manchester.

MR. S. L. PEARCE, the electrical engineer to the Manchester Corporation, has presented a Report to the Electric Lighting Committee, which is of more than local interest. The old arc lamps in Manchester have recently been replaced by new ones, and this has not only improved the street lighting, but has effected a considerable reduction in the current consumed. The new lamps burn for 120 hours without requiring new carbons, and it is stated that they give a clear and steady light. A very extensive series of tests was made with a portable street photometer at a height of 4 ft. 6 in. from the ground. The results are given in candle-feet, a candle-foot being the illumination produced by a standard candle at a distance of 1 ft. The illumination produced in ordinary street lighting varies from 0·03 to 1·5 candle-feet. An illumination of 1 candle-foot is good, and of 1·5 candle-feet very good. The maximum candle-power of a "nine ampere" arc lamp was found to be 1,150, and of three burners in a lantern using intensified gas 525. It was found that the mean illuminating effect produced by the arc lamps was 2·03 candle-feet, as against a mean effect of 1·43 produced by the intensified gas burners. The minimum illumination produced by the arc lamps was 1·08 candle-feet as against 0·76 for the intensified gas. Interesting curves are given in the Report, showing how the illumination varies at different distances from the lamps. The cost of 1,000 candle-power for 4,000 hours is given as 18*l.* when intensified gas is used, and 12*l.* 12*s.* 6*d.* when the electric arc is employed. The depreciation in each case is taken as 10 per cent. and the prices are the actual cost to the Corporation. Both the gas and the electricity are very cheap, the cost of the latter being taken as 0·95*d.* per unit. It seems to us that Mr. Pearce's figures give a very fair comparison between the relative costs of the two systems of street-lighting in Manchester. It must be remembered, however, that too much

reliance must not be placed on photometric measurements even when only relative comparisons are given, as the quality of the light emitted is so different in the two cases. The distribution of the light is better in the case of the electric arc. The Report would have been still more interesting if it discussed the relative merits of arc lamps and Nernst lamps, as, in our opinion, the latter lamps are very suitable for outdoor lighting.

Luton Parish Church.

ACCORDING to an estimate made by Mr. J. Arthur Reeve, a sum of 6,000*l.* is required for a reparation of the parish church. The buttresses of the tower, the north clearstory wall, and the roofs need speedy attention. A restoration of the fabric was begun by Street in 1865. The Hoo chapel on the east side of the south transept was renovated in 1870; the east wall was decorated with mosaic work, and a reredos in mosaic by Salviati, representing the Last Supper, was set up. St. Mary's, one of the largest of our country parish churches, and built for the most part during the XIIIth and XIVth centuries, is cruciform on plan; the massive and lofty western tower is constructed of flint and other stones laid chequer-wise; it has hexagonal turrets, with doubled buttresses rising in seven stages and enriched in their lower parts with canopied niches. John de Wheathampsted, Abbot of St. Albans, rebuilt the chancel *temp.* Edward IV.; the Wenlock chapel on the north side of the chancel is attributed to John, Lord Wenlock, lord of the manor *temp.* Henry VI., and contains the altar tomb with effigy of William de Wenlock, prebendary of St. Paul's and rector of St. Andrew's, Holborn, 1392. There are several interesting brasses of the period 1415-1568; the font stands within a remarkable stone canopy or baptisterium, of the Decorated period, and the gift, reputedly, of Anne Boleyn. The canopy, which is hexagonal on plan, has on each of its sides an open arch surmounted with a richly crocketted gable filled with tracery and ending in a finial. Between the gables are slender buttresses merging into crocketted pinnacles; the groined ceiling is embellished with allegorical carvings. The canopy, formerly gilded and painted, is 20 ft. high, and has an interior diameter of 9½ ft. Whilst baptisteries of that kind are not infrequent on the Continent, we believe the only similar examples in this country are the wooden one at Trunch, in Norfolk, and the small structure, containing the font, on the north side of the choir of Canterbury Cathedral, and there is some doubt whether the latter was originally intended for that purpose. The church measures 174 ft. by 57 ft., the transepts extending to 100 ft., and contains 2,500 sittings.

St. Matthew's Church, Friday-street, E.C.

NEXT week will be offered for sale, at the Mart, some relics of the church, consisting of the carved oak reredos or altar-piece, about 21 ft. by 12 ft., attributed to Grinling Gibbons, some oak-panelling, and other carved fittings. The church was pulled down in the winter of 1883-4, after the union of the benefice with the united benefice of St. Vedast, Foster-lane, and St. Michael-le-Querne. It was built in 1685 at a cost of 2,301*l.* 8s. 2d., after a simple design commonly ascribed to Sir Christoper Wren. The tower, of brick, rose in three stages to a height of 74 ft.; the body of the church, measuring 60 ft. by 33 ft., had a plain flat ceiling slightly coved at the sides. The east end, of stone, presented a row of six circular-headed windows, resting upon a lofty stylobate, and surmounted with a bold cornice and a balustrade. With the proceeds of the sale of the site and materials was built the church of St. Thomas, Finsbury-park, after Ewan Christian's designs; the carved oak pulpit, also the reputed work of Gibbons, was removed to St. Peter's, Fulham. The Myddelton family lived in the parish for a century or longer; amongst the many entries relating to them in the registers is one of a burial—"1631 December 10, Sir Hugh Middleton, Knight." Sir Hugh, who was made a baronet in 1622, was interred there in accordance with a direction in his will; he was knighted on the opening of the New River at Islington in 1613.

Messrs. Agnew's Exhibition.

THE tenth annual exhibition of pictures of the English school, at Messrs. Agnew's gallery, does not include any works so remarkable as those we have seen at some previous exhibitions there, but there are of course some very good pictures. There is Hoppner's portrait group of the Countess of Darnley and her daughter, in a kind of theatrical cottager's make-up, but a very fine picture both in design and colour; Raeburn's Miss Ross of Balnagown, in the "grand" pose which was affected in aristocratic portraiture of the time, effective in its way, though it would be laughed at now; Gainsborough's fine half-length portrait of Miss Walpole, and "A Mountainous Landscape" by the same artist, in the old school of classical landscape, which, like the posed portraits, is rather *passé* now; and a portrait of Lady Milnes by Romney which is more powerful and full in colour than Romney's usual style, and in fact recalls Rubens. A "Wooded Landscape" by Crome is interesting not so much in itself as in the fact that it shows us an unusual side of Crome. Among the most interesting things in the gallery are Morland's two well-known little pictures, "The Farmer's Visit" and "The Visit Returned," which seem to bring us into the atmosphere of "The Vicar of Wakefield."

The Leicester Galleries.

AT the Leicester galleries is a small collection of paintings by Mr. Lavery, the *raison d'être* of which is the exhibition here of his very charming portrait of a young lady carrying a great bunch of hawthorn blossom, formerly exhibited at the new gallery under the title "Spring," and now, we are glad to hear, to be placed in the Luxembourg. One can readily understand that it is a picture that would greatly recommend itself to contemporary French taste in art—which is saying much, but not everything. The rest of the works exhibited are small sketches and studies in oil, many of them very interesting, especially two or three of "Ranelagh," and two or three heads all entitled "Mary," but under different numbers.

A New Knight.

WE congratulate the Government on having at last done themselves the credit of giving some recognition to an architect who has occupied for some time what may be called an exceptional position among contemporary architects, in conferring a knighthood on Mr. Webb, who is henceforth Sir Aston Webb. The honour is somewhat tardy, but it is an indication that the Government are at last awaking to the fact that there are architects who are worth honours, as well as politicians and Government officials.

MAGAZINES AND REVIEWS.

THE *Art Journal* commences with an article on Amersham by Mr. W. Monk (who has lately gone to live there), illustrated by many sketches which are equally interesting for their subjects and their admirable execution. The last one, "An Amersham Well," shows a most picturesque old timbered interior. Amersham street, with its quaint old market-house (of which there are separate sketches), fills the page over the heading of the article. A short article on Blake comments on the fact of the simultaneous exhibition in London of Lawrence's pictures at Burlington House, and Blake's at the small Carfax Gallery. What a contrast between the painter of Society and the painter of visions and ideals! Lawrence had the large and popular galleries of the Academy, yet what is his value to the world compared with Blake's? Albeit that there is—we cannot deny it—a a strain of lunacy running through most if not all of Blake's work, yet is his lunacy a better and a higher thing than the drawing-room sanity of Lawrence. Etaples and its neighbourhood is the subject of an article and some good sketches by M. Gwilt-Jolley. The Christmas Art Annual issued by the *Art Journal* publishers is devoted to the works of Mr. Boughton, a painter of many pleasant if not very strong pictures. Among the illustrations given here of his work are some which are in a more powerful vein—"A Village Below the Sand-dunes" for instance. During the last few years Mr. Boughton has taken to a class of subjects more idealised and imaginative than he painted in his earlier days; of these, "The Dark Waters of Forgetfulness" has a great charm. "The Tanagrean Dance" is given in a colour print, in which form it comes out well enough, though the colour impression is rather at variance with our recollection of the original picture.

The *Nineteenth Century* contains a very interesting article on "Motor Traffic and the Public Roads," by Sir Walter Gilbey. A considerable portion of the article consists in a summary of the history of English roads in their different stages, from the time when the pebbly bed of a stream was selected by horsemen as affording the firmest ground, and when the main road at best was but a bridle-track, to the roads of Macadam and Telford, whose system of structure has, however, only been applied in the country to main roads, a number of country roads still remaining which have no "bed," and are unfit to bear heavy traffic. Sir Walter is adverse to the motor on ordinary roads, and points out that many country roads at this day are so narrow that ordinary vehicles have to pass each other at a walk for safety, and that the fast motor on such roads, with the increased width of build which is threatened, would practically close them to all but pedestrians; and, we may add, how are the motors of increased width even to pass each other? The relaying and widening of many roads will be a necessary preliminary to the extension of the use of motors. In regard to the question of speed, the writer observes that the argument of motor-builders seems to have been that as they *can* build motor-cars that will run at sixty miles an hour, therefore twenty miles an hour is a very moderate speed; whereas the question of maximum speed is one which should be decided, not on the capacity of motors for fast travel, but on the character of our high roads, and the use made of them by the public. He points

out, too, the important difference between fast motor racing on the splendid French high roads, "sixty feet in width, and running straight as a railway for miles," and the narrow English roads, "seldom running straight for a furlong" (that is a little exaggerated), and often having high banks or hedges, which prevent a sight of what is coming round a curve. The article is an eminently logical and sensible one, and very interesting reading as well.

The same issue includes an article on the "Exhibition of Early Art at Siena," by Mr. Langton Douglas, who has made the art of Siena a special study. The article is mainly concerned with the study and criticism of special works shown at the Siena exhibition. Mr. Douglas concludes by expressing a hope that this exhibition may lead to the formation at Siena of a permanent art museum illustrating the history of the sculpture of Siena and her triumphs in the minor arts.

In the *Fortnightly Review* Mr. W. M. J. Williams gives a summary, bristling with figures, of the conditions of "The Transfer of the London Water Companies." We have neither time nor space to follow the writer through his figures. He is no doubt right in saying that the Metropolitan Water Board has a formidable task before it—more formidable than is perhaps at present realised; but we think he underrates the quality of the present supply. On the whole, London is supplied with wonderfully good water, considering the nature of its principal sources. It is quantity rather than quality that is deficient; and there is little doubt that, if the increasing requirements of the London public are to be supplied, the new Water Board will have to look for additional sources of supply beyond those at present available. We may add, as another reason, that it is highly desirable that the limit of the amount allowed to be abstracted from the Thames should be curtailed. To the same issue Mr. H. M. Paull contributes a short article on "The National Art Collections Fund," which has been formed to provide if possible, means for securing for this country works of art which otherwise, through the indifference and parsimony of our Government in such matters, would be lost to the country, as many desirable works have already been lost. We entirely agree with Mr. Paull that our National Gallery is "ludicrously deficient in pictures of the French School"; in fact, it would seem that the very existence of a French School has been all but ignored in the make-up of the collection. The roll of membership of the Fund has now reached nearly 500 names, including, we are informed, "the Directors of all the Museums and Public Galleries, many art-critics and experts, persons interested in every branch of art, and representatives of all ranks and professions." It is to be hoped that the efforts of the Fund may be successful in securing the purchase of works which might otherwise be sent out of England, as has been already the case in so many instances.

Harper includes a short article by M. Flammarion on the much-vexed and (we think) insoluble question—"Are the Planets Inhabited?" He sums up in favour of this conclusion, but on no scientific reasoning; the article, in spite of its coming from such an eminent astronomer, is one more of the fanciful reflections on the subject that are so common; the argument really only amounting to this—it would be so delightful and interesting to think that other planets are inhabited; therefore let us think so. An eminent novelist, Mr. W. D. Howells, in the same issue writes an article on the attractions of Folkestone—"In Folkestone out of Season"; attractions which we had not, we confess, been conscious of, but one never knows what scenes, in this country, will call forth the admiration of an American visitor. But as a matter of literary style it is a charming article.

An article by Dr. H. Smith Williams, on "Some Greek anticipations of modern Science," deals with an interesting and rather new subject, and shows how far some of the Greek thinkers and observers of two or three centuries B.C. were in advance of mediæval perceptions on the subject of the universe.

In *Scribner* Mr. Eaton's paper on the Royal Academy is concluded, and is a very interesting one, from its illustrations as well as its matter. One or two examples of letters received by the Secretary are delightful. Under the "Field of Art" Mr. Russell Sturgis writes a paper on "Grass and Trees in Towns," in the course of which he objects to the present schemes in regard to Washington Park and the surroundings as too formal and grandiose, and wishes for a less formal park, "laid out for the comfort and delight of the inhabitants of Washington." This is, apparently, one of the first notes of a reaction against the formal garden. As respects the Washington scheme, at all events, we cannot agree with it; the capital of a great country demands a stately treatment in its surroundings.

Longman's Magazine contains an article by Dr. Farquharson on "The House of Commons from the Inside," mostly of course political and social, but to which we call attention in consequence of the testimony given by this member of the House of Commons, who is also a medical man by training and profession, in regard to the ventilation of the building, about which such exaggerated complaints are made from time to time. We have always maintained that these complaints are in the main either those of faddists or of nervous or discontented persons who must always have some grievance or other. This is Dr. Farquharson's testimony:—

"Every year, just before the meeting of Parliament, an agitation is started during the 'silly season,' when journalistic material is running short, about the ventilation of the House of Commons and the ravages of the all-conquering microbe; and those who have never sat on the green benches gravely inform those who do that their health must seriously suffer from living in such an unhygienic atmosphere. Fortunately for the more credulous among us, this subject has been most carefully threshed out before three Parliamentary Committees, on all of which I sat, and which gave, on the whole, very encouraging reports. The situation of St. Stephen's is hardly an ideal one, for it is on the banks of a sluggish tidal river, the air from which must be relaxing in quality, and now and then broad reaches of slushy mud would seem to challenge the attention of the sanitary inspector. No doubt in the Strangers' Gallery, and that stuffy hole the ladies' cage, and the quarters allotted to the fourth estate, the atmosphere, gas-heated, and breathed and rebreathed by crowds of legislators, can hardly be regarded as typically bracing. But down below, where we sit, it is wonderfully fresh and free from the faded stuffiness which makes itself painfully obvious in every other large public building with which I have any practical acquaintance, and the evidence of experts, taken before the House of Commons Committees, confirms me in my belief that, considering the sources of supply, the artificial methods of ventilation, the foreign material carried in by members' boots, and blown aloft by the currents of wind streaming through the perforated floor, and the habitual overcrowding of the House from time to time, the air is wonderfully pure and good, and cannot do harm even to the most infirm legislator."

In the *Antiquary* we have the second portion of Mr. Bailey's article on "The Wynne Brasses at Llanwrst," the second illustration showing a remarkable and unusual example of a brass in an exceedingly florid style of rococo decoration, surrounding a realistic half-length portrait. Mr. Sieveking's article on "St. Hild and her Abbey at Whitby" is a tribute to the memory of one who, even from the somewhat vague tradition history, was in her day a great spiritual power.

Good Words includes an article on the picturesque subject, "Sussex Stiles and their Surroundings," by Mr. J. Harris Stone. The Sussex stile, however, according to the author, seems to lack decisive local character, and to be in fact of a very varied physiognomy:—

"Some are made of odd pieces of old wood—if near the sea, of wreckage. Others are constructed with concrete steps evidently made like a pudding in a zinc pail and turned out. Others again are made over flint-pebble walls, by cutting away a portion of some 3 ft. run, lowering it by some 2 ft. and smoothing over the top of the indentation with cement. These latter are characteristically Sussex, and pebbly walls being naturally at least a foot thick, are not the easiest form of stile to surmount."

Notices on some other periodicals we are obliged to defer till next week.

SOCIETY OF ARTS.—The Society of Arts will commence its fourth half-century on the 16th, when Sir William Abney, as Chairman of the Society's Council, will open the 151st session with an address. The subjects on which papers will be read at the meetings before Christmas include British Trade, Canals, the St. Louis Exhibition, Patent Law, Burma, and Street Architecture. There will also be a course of lectures on wind instruments, with musical illustrations.

WESLEYAN SUNDAY SCHOOL, COTTINGHAM, NEAR HULL.—The new Sunday school in connexion with the Wesleyan church at Cottingham was opened on the 3rd inst. The architects of the new premises are Messrs. Gelder & Kitchen, of Hull, and Mr. F. Bilton, of Hull, was the contractor for the erection. It is a red-brick building, with stone facings. The interior consists of a schoolroom in the centre, which will accommodate 250 scholars. Above the entrance is a gallery of pinewood. On either side are four classrooms, two of which open out of the upper gallery.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE first Ordinary General Meeting of the Royal Institute of British Architects was held on Monday evening at No. 9, Conduit-street, Regent-street, when Mr. John Belcher, A.R.A., President, occupied the chair.

The minutes having been taken as read, the following gentlemen were formally received for the first time since their election, *i.e.*, Mr. Frank Dicksee, R.A., Hon. Associate; Mr. H. L. Goddard, President of the Leicester and Leicestershire Society of Architects; and Mr. John Keppie, President of the Glasgow Institute of Architects.

Statutory Examinations.

The Secretary, Mr. Locke, announced that at the Statutory Examinations, held at the Institute on October 20 and 21, nine candidates were examined and the following passed, *i.e.*, Mr. Percy John Black, Lambourn-road, Clapham, S.W.; Mr. John Moir Kennard, Railway-approach, London-bridge, S.E.; Mr. John Todd, Billericay, Essex.

He also read a list of gentlemen nominated for membership in the various classes.

Deceased Members.

Mr. Alex. Graham, Hon. Secretary, said he had to announce the decease of several members since the last meeting, *i.e.*, R. Knill Freeman, of Manchester, Fellow, elected 1882; F. Manoah Kent, of Natal, Fellow, elected last March; Arthur Green, Fellow, elected 1879; P. W. Barrett, of Cape Colony, Associate, elected 1888; E. Simm, of Canada, Associate, elected 1902; W. Henry Arber, Associate 1878, Fellow 1893; E. Baldwin J. Knox, Associate, elected 1877; J. Lewis Thomas, S.A.F., Hon. Associate, elected 1897; and Professor Kerr, Fellow, elected 1857. Professor Kerr was a very conspicuous practising architect, and as one of the founders and the first President of the Architectural Association he deserved their gratitude for having initiated a movement that had been attended by such very marked success, especially in recent years. Professor Kerr was a constant attendant at the meetings of the Institute until his health broke down a few years ago, and he was one of those men who was very enthusiastic in all he took up. On some occasions it might have been thought that the Professor was a little too aggressive in some of the things he said in debate, but that was perhaps due, as was the case with many men of similar character, to a strong will and very earnest thought, and beneath it all there was an under-current of good humour and good will towards everyone; and those who knew him well realised the earnestness of motive in everything he took up. The profession was indebted to Professor Kerr for many things. Quite apart from his work in connexion with the Architectural Association, the Institute was indebted to him for the suggestion to found the Standing Committees of Art and Literature and Science and Practice, and those committees, as most members were aware, had done great service for the administrative body; they had been indirectly a great benefit to many members in distant parts of the world, and they had also brought together hundreds of the members who had met to discuss matters of great importance, not only to the Institute but to the benefit of the public. In regard to the Architectural Association, which had just achieved such a marked success, he hoped that when its records are written, a prominent place would be given to Professor Kerr as one of the pioneers of architectural education in this country. He (the speaker) desired to move a resolution, which he knew would be accepted by every member of the Institute, that a letter be sent to the relatives of their deceased colleague, sympathising with them in the loss they had sustained, and expressing the full appreciation of the Institute of the many services rendered by the late Professor Kerr during many years, and of an active career in the cause of architecture and architectural practice.

The resolution was then silently agreed to.

President's Address.

The President then read the following address:—

COLLEAGUES, LADIES AND GENTLEMEN,—

It has been the custom of the Institute, as I daresay you all know, for the President, in opening the new session with an address, to pass in review the important events of the last session, and also to say a few words upon

the existing condition of our national architecture as a whole. Before entering upon my task I desire to thank my colleagues for the honour they have done me in electing me as President—an honour which, coming as it does from my brother architects, I am sensible is of peculiar distinction. It is not without anxiety that I enter upon my duties, for, besides the responsibilities attached to the office, I know how difficult it will be for me to follow a President of such exceptional qualifications and ability as my predecessor, Mr. Aston Webb. We all recognise and appreciate much that Mr. Webb has achieved during his term of office, but his colleagues on the Council best know how greatly his work has been to the advantage of the Institute. His artistic sympathies, his genial manner and ready tact have secured for him the widest popularity. The success of the President's "At Homes," which he inaugurated, has been most marked. They have afforded opportunities for social intercourse and the exchange of ideas, and have been occasions on which the experience of those of riper years has been readily placed at the disposal of younger brethren. The drawings and sketches also, which have been exhibited, proved both attractive and helpful. I propose, therefore, by your favour, to continue these pleasant gatherings, from which "My Lady Nicotine" will assuredly not be banished.

Turning to matters of more general architectural interest, the past year has been distinguished by events of unusual importance. The laying of the foundation-stone of the new Cathedral of Liverpool—probably the last Gothic cathedral to be built in our days—was a unique occasion, and its significance was recognised by His Majesty the King in performing the ceremony. The greatness of the work and the importance of the city, combined with the desire of the citizens that the sign of their faith should dominate this centre of commercial enterprise, mark it as an event not only in architecture but in our national history, and one which should materially affect the lives of the toiling masses. We shall watch with interest every stage and every feature in the growth and development of this important building. In the genius of Mr. G. G. Scott, who has inherited the traditions of a talented family, and in the supervising care of that most learned and profound exponent of Gothic methods, Mr. Bodley, R.A., we have ample assurance and guarantee that the beauty and excellence of the work will be complete.

Another great undertaking which has been begun is that of the Memorial to our late Queen, as designed by Mr. Aston Webb. Already the laying out of the new road in the Mall, with its avenues of trees and approaches to the Palace, is complete, and has been greeted with universal approval and commendation. The large piers which mark the points of divergence of the several roads and avenues show how effectively these are set out. Not only are the existing approaches—with Constitution Hill—brought into unity, but they are so contrived as to open up new vistas. At one point, for instance, a fine open turfed way reaching across the Green Park will be viewed through elaborate iron gates and piers with fine effect. Mr. Webb has certainly made the most of his opportunities, and when all his design, including the arcading, is completed we may anticipate a result of which we shall be proud. The present unfinished aspect of the work, from which the main architectural features are lacking, can give the public but little idea of the beauty and harmony of Mr. Webb's entire scheme. In this connexion I may just say that the very commonplace electric light standards, to which so much exception has been taken, are only temporary, and will, I hope, soon be replaced by others specially designed by Mr. Webb himself.

The Indian Memorial to the Queen has also been taken in hand. Owing to the nature of the site chosen the foundations for the superstructure designed by Sir William Emerson have presented many difficulties, which, however, have been overcome by methods of considerable ingenuity. We shall look forward to having the particulars and description of this interesting work before us in due course.

The contemplated extension of the British Museum—so long needed—has been entrusted to Mr. J. J. Burnet, whose excellent Greek work in Glasgow fully entitles him to this distinction.

Amongst the events of the year must be recorded the bestowal of the honour of Knighthood upon our colleague, Sir Henry Tanner, whom we sincerely congratulate on so well-deserved a reward for his eminent services. A proof surely, this, of the awakening interest and increasing regard which our beloved art is beginning to inspire in the minds of those in authority.

Before passing on I desire to remind you of the great International Congress of 1906, which, as you are aware, is to take place in this city. The necessary preparation and organisation for this important event are already well in hand, and will continue to occupy the attention of your Council. I have the honour formally to announce that the King has graciously consented to be the Patron, and the Prince of Wales the Honorary President of the Congress. The occasion will be in the highest degree interesting and important—fruitful, too, we may well hope, in opportunities not only for advancing the true interests of our art, but also for drawing public attention to its value and importance as a factor in our national life and education.

It is to this end that our Institute should always be directing its efforts. We are something more than a Trade Union—we are a corporation whose members are called to rise above the differences which so often distract the artist, and to act harmoniously as from one centre, to the end that Architecture may flourish as a fine art. The Institute's growing influence brings, of course, distinction to its members, which distinction, however, must be honourably earned—won, in fact, by force of merit rather than demanded as a right. The increase in our numbers gives proof of vitality and vigour, but this involves greater responsibility, and an obligation to let the audacity of youth give place to the growing caution and dignity of maturer years and riper experience. We may, perhaps, differ among ourselves as to the true line of advance, but we are all, I believe, actuated by the same loyal desire, and all ambitious to see the Institute firmly established in the honourable position it has earned. We must see to it, then, that the foundation is secure before we attempt to add to the superstructure. We must, in other words, know something of our limitations as well as of our influence and power, bearing in mind the old lesson of the nut and the nutcrackers—if the crackers are not strong enough to crack the nut, the nut will assuredly be hard enough to break the crackers. The purpose and work of the Institute are not limited to the great metropolitan interests. Unlike the Allied Societies which are represented on its Council, and which are mainly concerned with local and personal matters, the Institute as a corporate body has a duty towards the whole profession, and its Council, in weighing the many difficult problems that come before them for solution, have to remember this greater responsibility, this more extended obligation.

Registration.

One such subject before the Institute at the present time is the question of Registration. Registration is apt to be somewhat hastily regarded as a panacea for all ills, so that the very sound of it breathes comfort, like "that blessed word Mesopotamia" in the story of the old lady and the sermon. The simplicity, however, of the operation or process of registration must not be taken for granted. A clear definition of its practical working and effect will, no doubt, be elucidated in time; but as this is the task upon which the Committee specially appointed by the General Body are now engaged, I feel it would be better for us discreetly to keep silence until they have reported upon it. Moreover, as there is considerable diversity of opinion, it will be well to hear both sides before coming to a decision.

Architectural Education.

There is, however, one matter, affecting both ourselves and the Allied Societies, upon which we are all agreed—viz., the special education and equipment necessary for an architect. Some carefully-devised scheme of training is in reality that proper foundation to which I have alluded, and must have precedence of all other claims upon our time and attention. I congratulate the Institute that during the past Session an efficient "Board of Architectural Education" was established. This scheme was brought before you by my predecessor, under whose able guidance it has come to fruition, and I am glad to inform you that Mr. Webb will continue to act as Chairman of the Board. The distinguished men who are associated with him are in themselves a sufficient guarantee that the result of their labours will be far-reaching and beneficial. Several meetings of the Board have already been held, and the business in hand is far advanced. Their scheme will shortly be before you and, I hope, in active operation before long.

The Public and Architecture.

Another cause for congratulation is the growing interest of the public in architecture—an interest evidenced in a variety of ways. It is obvious that side by side with a more systematic training of the architect, some attempt should be made to educate the public. At the very least we might set before them fundamental principles and elementary axioms, that they may know what to appreciate and what to avoid. This might be partially accomplished by lectures in the large cities and towns, under the patronage of the local authorities; also by the distribution of short papers or pamphlets on the subject for the use of schools, art teachers, and others. Unfortunately, at our great centres of learning, which should have given a lead in this matter, the study of architecture has been made subservient to archæology; it has been a handmaid to other interests rather than a queen in its own right. The result is only what might have been expected—viz., that architectural work of all sorts, good, bad, and indifferent, has been judged and appreciated (or the reverse) not upon its merits but according to its antiquity. Archæology has thus been an unconscious cause of the decay of architecture as a living art. But, it may be asked, are not the technical schools educating our people in a knowledge of architecture? Scarcely. They impart a knowledge of the methods and science of building construction, but what is needed by the general public is not so much a technical knowledge as a discriminating taste moulded and set upon elementary principles, a discrimination which will enable them to approve what is excellent and reject what is inferior. In the XVIIIth century the education of a gentleman was not considered complete unless he had acquired some knowledge of the rudiments of architecture, and a refined taste in the appreciation of its beauties. Too often, it is true, the dilettante thus inspired attempted to express his ideas without the aid, or with only the partial aid of the professional architect, and fell into the many errors and mistakes into which a little learning is always so apt to betray a man. Such rash experiments are to be deplored, but the interest in and appreciation of art which prompted them is one of which we might well seek to revive.

In this good cause I believe the power of the Press may be reckoned on. In an admirable and interesting article in *The Times* of 3rd September last, from which I should like to quote more fully, the writer, after stating that every Town and County Council is making effort to establish some kind of technical education among the people, adds: "The want of such an education in England, and of a rudimentary knowledge of design, has been matter of complaint during many generations, but until quite lately the complaints have fallen upon deaf ears." Again, after drawing attention to the general neglect of decorative artists in the past, who had to abandon their art because there was no demand for it, he writes, "Things have changed a good deal in the last forty years, and there is now, at least, no want of schools of art or of the encouragement that is given by an enthusiastic, if rather uninformed, public opinion." It is this uninformed public opinion which is the difficulty and the danger, and I hope a committee of the Institute may be appointed to consider the subject, and to suggest something that may be done by way of remedy.

L'Art Nouveau.

In these days, supply (of a sort) follows hot-footed upon the heels of demand, and the quickened public interest in art was promptly met by the abominable affectation (I should like to use a stronger phrase) of what is known as "l'art nouveau." A new art forsooth! A pernicious trick easily acquired and applied alike to buildings or jewellery, furniture or dress; no matter what the nature of the material, whether iron or wood, stone or glass, all alike twisted to curves representing the final stages of vegetable decay and animal decrepitude, in defiance of all true principles of construction and beauty. In *The Times* article I have quoted from, an incident is related of an intelligent French workman who, passing through a museum with an Englishman, after contemplating a Riesever cabinet, turned to an "art nouveau" chair (alas that it should have been there!), and delivered his soul as follows:

"In the old days they had ideas; but as for this chair—well, it is the art of fools suited to an age of fools." In correcting such false ideals as "l'art nouveau" holds up to the public admiration, the Press can render powerful aid, but we must do our part also by supplying principles to direct and mould the taste of the people in matters architectural.

Public Authorities and Architecture.

Fortunately, the County Councils and other public bodies acknowledge the advantage to the community of these artistic influences, and are alive to their importance in trade and commerce, but have they ever yet regarded them from the point of view of the public health and morals? If legislation is necessary on sanitary matters that the public may be protected from insidious poisons conveyed through the senses of smell and taste and touch, may it not be equally important to protect the sight? Environment insensibly influences the development of all forms of life, and it cannot be doubted that the squalid conditions, horrid forms, inharmonious colours, and injurious sights amongst which such a large proportion of our urban population spend their lives, contribute their quota to the sum total of degenerate moral tendencies of which recurring acts of crime are the inevitable outcome. Even the untrained have sensibilities to be shocked and blunted, and if the effect of a gloomy and monotonous environment be bad, what shall we say or think about the cumulative moral effect of those wildernesses of mean streets and horrid buildings by which our great cities are disfigured? There must be no concession to what is bad or even mean in architecture if a healthy and manly condition of the people is to be maintained. This aspect of the functions of good architecture should be considered by the authorities who watch over the needs of the community.

And may it not be that many who do not live in mean streets are yet suffering, perhaps unconsciously, from the conditions by which they are surrounded in the public thoroughfares, their senses assailed by a multitude of petty annoyances amounting in the aggregate to a heavy burden from which they would fain escape? It is a well-known fact, for instance, that an ill-designed building looked at suddenly will cause an involuntary shudder in a man with a trained eye, while certain bad forms as well as bad smells will produce a feeling of actual nausea. Any and every cultivation of the senses, in opening up hitherto unknown avenues of delight, brings with it also increased discomfort, for it reveals defects of which we were formerly unconscious. All forms of knowledge have this or a similar drawback. Rudyard Kipling puts it from the moral side in a very telling form when he makes our friend Tommy Atkins sing the praises of some place he had discovered (Was it Mandalay? At any rate it was "east of Suez"), "where there ain't no bloomin' ten commandments," or words to that effect. But seeing that we have our ten commandments, or our canons of art, as the case may be, our moral principles and our artistic tastes, every violation of which brings its fore-ordained penalty, surely we may look to the authorities to defend us from all the hideous sights and sounds and smells which force themselves upon us in our public thoroughfares, whether urban or suburban.

Architects and Buildings.

The object which business-men have in view in choosing or designing or rebuilding the frontage of their premises is to arrest the attention of the passer-by. To catch the eye—that is everything. They succeed sometimes, alas! too well by what is practically a severe shock to the nervous system of a man of taste. The buildings they erect are marked by such a vicious extravagance in material and so-called ornament, and display such an eccentricity of forms as will not only effectually catch the eye of the passing wayfarer, but will certainly also "land him in the interior"—if not in a physical, in a metaphysical sense.

The coarseness and vulgarity of these methods need not be wholly attributed to architectural design—though certainly once the author of a work of this class, when remonstrated with, did boast that he was a "commercial architect," and that his clients wanted "the most show for their money." This advertising mania is the cause of much which we deplore in our street buildings. If the law can restrain street cries and noises because they affect the nervous system, surely it may well undertake to control the blatant architectural efforts which may truly be said to "cry aloud and shout" in our public ways.

Some effort has been made to control advertisement signs, those modern eyesores which, not content with disfiguring our good buildings and important places, have also intruded themselves upon the beauty and repose of the rural landscape. Heavy taxation is too mild a penalty for these, especially when they blink.

Then, again, the increased height of buildings contributes largely to that atmosphere of gloom which pervades some of our streets. I am not objecting to lofty buildings on special sites or where the road is wide enough, nor are architects to blame if they show a willingness to add as many stories as are required. The responsibility rests with the ground landlords, who insist upon raising the ground rents whenever the opportunity occurs, so that additional stories must be built to meet the increased demand. Owners who are privileged to possess land in important areas should be under special control. If certain well-defined rules were laid down applicable to all such places and sites, they would serve for the guidance of those who purchase property or obtain leases in those neighbourhoods, and freeholders would thus be restrained from demanding excessive ground rents.

Public Improvements and Artistic Control.

My predecessor in office strongly urged the need of some authority to whom schemes of public improvements might be submitted, not necessarily for sanction but for consultation and advice—a suggestion which Lord Windsor was good enough to endorse, and has since sought to get adopted. This is a great advance, but I should like to press the matter still further. Consultation and advice may be sufficient in many cases, but there are others where the First Commissioner should have power to decide and determine. Artistic needs must be insisted upon, more particularly where considerations of finance are likely to exercise an undue if not tyrannical sway.

Quite recently, when some important improvements were suggested in the Strand frontage of the new street, the members of the County Council appointed to meet the artists belonged to the Finance Committee of the Council, and, as was to be expected, showed but little sympathy with artistic ideals. Yet artistic treatment has a financial value of its own, as owners of property are beginning to find out—for where the requirements of art are listened to, property is more eagerly sought after, and its value correspondingly enhanced. Not long ago the *Globe* newspaper drew attention to this subject in a short article, *à propos* of a paragraph in Sir Arthur Conan Doyle's address to the Incorporated Society of Authors. Sir Arthur, while recognising the desirability, even the necessity, of a strain of artistic blood in the body corporate of the London County Council, did not seem very sanguine, for he calculated it would take a man with the talent of Michael Angelo, the despotic power of Napoleon I., and the all-round energy of the Kaiser Wilhelm to make this city of mean streets and of the commonplace to be what it should be—a fitting centre of the greatest empire that the world has ever seen. No doubt the qualities here so tersely epitomised would prove advantageous, but how much might be accomplished in this direction if only the First Commissioner of Works, acting as a Minister of Fine Art with the aid of an Advisory Committee, possessed the necessary despotic power to see the right proposals adopted. This is above all imperative in the treatment of our public places, in the formation of new thoroughfares, and in dealing with spaces and buildings around our public institutions.

Again, where buildings should be considered in relation to their surroundings, where they must be in scale, and accord in breadth of treatment, and where other similar claims of art must be considered if the proposed work is to be in due relation to and in harmony with the existing or determined general scheme, all these are cases where the power of authority may well be invoked and exercised on behalf of the best interests of the community. A Building Act is of little or no good here. The law can determine the height of buildings, fix the size of lighting areas, and so on, but no mere Act of Parliament can define the subtle qualities and delicate nuances which distinguish good art from bad, or rather shall we say which separate art from the lack of art. In France and in the States, both of them lands of freedom, some such exercise of authority as I am advocating has been found necessary—why not here?

Ancient Lights.

I am by no means suggesting a mechanical or despotic control such as would engender a monotonous uniformity and ultimately entail a loss of individuality, but a freedom under control—for freedom without control is licence, and licence tramples under foot all consideration for others' rights. This is the one side. On the other, so-called "rights" may be unduly and oppressively insisted upon. The terrorism, for instance, of "Ancient Lights" has frequently been prejudicial to architecture, and a short time since it culminated in such unreasonable demands as to paralyse all building operations.

We in this City, and indeed the whole country, owe a debt of gratitude to Mr. Howard Colls for boldly withstanding the legal opinions of the courts and appealing to the House of Lords. A clear and satisfactory judgment has thus been obtained on the question, establishing a principle of law which will relieve both property owners and the public from formidable restrictions. To the architect this must come as a relief, for the difficulties which he has to encounter in the exercise of his duties are harassing enough without the added fear of litigation, which must necessarily hinder him from giving that thought and devotion to his art which the case requires. It will not be forgotten that an Easement of Lights Bill, introduced by Mr. Fletcher Moulton, K.C., on behalf of the surveyors and ourselves, has been before Parliament the last two sessions, and steps will be taken to continue its promotion when Parliament meets again. The Bill, as I believe you all know, covers the ground of the Colls *v.* Home and Colonial Stores case, and provides a simple machinery for arbitration.

The Growth of Suburbs.

Light and air have long been bracketed together, and, indeed, in most cases they do go together. There is, however, one important respect, attention to which has been drawn in the columns of the *Times*, in which the question of air calls for separate and independent consideration. In the extension of suburbs of cities and towns the public health demands that the buildings should be farther apart and the open spaces larger the further they are removed from the centre. In Germany the authorities regulate the growth of their suburbs. Different heights and different degrees of proximity are prescribed according to the locality. Towards the centre five stories is the limit which is reduced to three farther off, and then the houses must be detached. In certain directions a larger area must be reserved for the wind to blow freely about the houses.

Our London suburbs are becoming a source of considerable danger. Here the houses are indeed smaller, but they are so closely packed and crowded with unhealthy subjects that the air which passes over them to the centre is becoming denser and more impure every succeeding year, and should a serious epidemic occur the spread of contagion to the great centre and thence again outwards seems inevitable. The lungs of London, as they are rightly regarded, must not consist solely of the few open parks, which, after all, are now more or less closed in, but of wide channels and routes for currence of air to flow freely through. This is a matter I commend to the attention of our Town Councils.

Borough Surveyors and Architectural Works.

One of the questions raised by my predecessor, and still under the consideration of the Council, is the growing habit of employing the borough surveyor or engineer on what is really professional architectural work. It is true this official is usually a man of considerable capacity, but the very nature of his ordinary and proper work stands in the way of architectural or artistic accomplishments. The Committee appointed to report upon the subject have done so in a very thorough and excellent manner. They have ascertained the custom and conditions existing in other countries, and the result of their labours will be condensed and published in the *Journal*. It is proposed to take steps to bring the matter to the notice of the public authorities and others who may be concerned.

It has been urged with much show of justice that our Institute ought to afford help and protection to its members in legal matters,

when these matters are wrongly forced upon them, and are of such a character as to prejudice the interests of the profession. The principle has been approved by the Council, and a Board established, called the Board of Professional Defence, which, under proper restrictions, will be empowered to deal with such cases as come within the above category.

The increasing usefulness of the *Journal* in bringing matters of importance to our notice leads me to suggest that this usefulness might be extended if members would more freely communicate matters of general interest—either in the form of letters to the editor or of short articles—drawing attention, for instance, to buildings or objects of interest seen during their vacation, that others may be led to visit the same locality. There is scope also for short descriptive papers on various subjects connected with our methods or work, and such papers would often prove of great value and interest to readers of the *Journal*. The opportunities afforded by the sessional papers for imparting information are necessarily few, but the *Journal* may to some extent make good the deficiency.

Condition and Prospects of Architecture.

These, gentlemen, are some of the minor matters which interest and concern us as architects. I should like to add a few words upon the general condition and prospects of our art in this land.

Those of us who have watched the steady improvement in English architectural work during the last few years cannot but experience a measure of satisfaction and even of pride at the progress which has been made. Our colleagues on the Continent and in America who have been inclined to regard architecture as a dead art in this country are already awake to the fact that there is more vitality and advance being exhibited here than anywhere else. Many American friends who have been absorbed by the excellent French methods they have studied have recently expressed to me their admiration of certain hitherto unsuspected qualities and beauties in our English work. This is both gratifying and encouraging, especially as under our unfortunate climatic conditions we are constitutionally prone to belittle everything that is of us or around us. Do not imagine, however, that our friendly critics have not been discriminating. "A man," said Ruskin, "may hide himself from you in every other way, but he cannot in his work—there you have him"; and our critics have had us, sometimes, to our confusion of face before them.

We cannot however fail to observe that there is a growing demand for the best and purest work, and as the appetite for what is good is whetted, all that is vulgar and bad will become repugnant and tend to disappear. As the sunshine of popular favour shines upon our art it must advance. Side by side with the good fruit there will still flourish the ill weeds, those vulgar street buildings and fantastic fripperies which flaunt and force themselves to the front. Yet we may take heart even from these, for they are a sign that there is something they are fighting against which will eventually be valued at its true worth. Let them alone, they must come to grief. If "experience is the dress of thought," then a building is bound to reveal its true character at the last. If it glitters for show it proclaims that which is false and weak. "To dazzle let the vain design," said Pope; "to raise the thought and touch the heart be thine."

Architecture must tell its tale; it has its message to deliver. Like a musical score it expresses a great deal more than meets the eye. Its meaning is hidden behind the veil of outward symbol. It is a mystery whose voice is heard speaking according to each man's mood, capacity and temperament. Just as the words of genius have a profounder meaning than the actual thought that prompted them, so true architecture possesses the power, as by a magic wand, to "call up spirits from the vasty deep"—from the ocean of human thought and passion.

Art *speaks* in all its manifestations alike. Every picture, every group of sculpture, every musical composition is a vehicle for the conveyance of thought in poetical form. Architecture is the prose of inarticulate but beautiful thought and feeling. Sometimes it tells of the commonplace in life; rising higher it speaks of domestic peace and happiness; and yet again in more stately diction it sets forth the grander and larger purposes of life. It recounts the past, records the present, and holds up ideals for the future. But only when it is enriched from the sister arts of sculpture and painting can it tell the tale with the fulness of eloquence and power—for then it speaks to the heart in tender and solemn tones of all that is most grand and beautiful in life and humanity.

It is a pleasure to see that much has been done in recent years to cement and confirm the alliance of the arts. The brotherly readiness of the sculptor to aid in the good cause should be recognised, and his name coupled with the architect's in all such work. If the building is to be harmonious in expression these two must work together from its conception, and the sculptor must have a fitting and honourable place assigned to him whence he may take up his parable with effective force. Not a new or separate *motif*, but the same with new progressions, a harmony with one delightful melody. When, further, the orchestra is increased by calling in the painter's art, then, like the vibrating strings with their soul-stirring chords, the refinements of tone and colour appeal to the heart with a new and higher power based upon the primal sympathies and emotions of the human breast.

Why, then, we may ask, have these arts so few opportunities of joint action? Is it not because architecture has forgotten her place and lagged behind? Is she not like Lot's wife, who, looking back, was stiffened into a pillar of salt? Looking back, there lies the explanation. The sister arts of painting and sculpture have been the while advancing; they have developed, but architecture has stopped short and been content to look back to the past, to draw upon old periods and reproduce "defunct" styles, so that the living arts of the present age could no longer associate with one that was a mere mouldering survival from bygone times. A special architectural carver had to be trained to forge or imitate archaic forms and reproduce the quaint and grotesque figures of almost forgotten centuries; while the painter has given place to the "firm of decorators," and his message to the dumb extravagance of mere costly material.

All this, I believe, will soon be past history, a vanished nightmare, for a new era has undoubtedly begun. May we not justly feel sanguine? After all, the great thing is not so much where we stand as in what direction we are moving. It is no question of style. Every period has contributed something to our art. Gothic, with its rich luxuriance, has been the foster-home of the crafts, and if the crafts themselves seem to have lost their independence and vitality, it is because having had a part in beautifying the "styles," they have, like them, been made to serve in the copying and forging of bygone examples. Without denying that in the hands of true genius these past types may be taken up and carried forward, yet it is rather with the Renaissance forms that modern sculpture and painting can best and most easily be associated. It is natural perhaps, that I should have this confidence in the development of the Later Renaissance. There, at any rate, it will again be possible to co-operate with one's brother artists, and that must be a step in the right direction. There is in its methods a freedom, a vitality, and a power of adaptation to modern requirements which surely stimulates conception and fosters growth. There is, too, a characteristic wealth of stateliness and grandeur fitting it for all high and noble purposes. The genius of Inigo Jones, and subsequently of Wren, taking it up, each at the point at which he found it, carried it on far beyond its budding efforts, and established it as a great English tradition. Here is the "quarry," and, to quote the words of Goethe, "He does not deserve the name of architect except out of this fortuitous mass he can combine with the greatest economy, suitableness, and durability, some form the pattern of which originated in his own soul."

Let us be enthusiasts. Our national architecture is not dead; there are many signs of life and movement within it. The spark is there; let us blow upon it and the fire will burn. Let us encourage and stimulate the energies of those who, with the love of their art burning brightly, seek not arrogantly for something new, but to advance that which they have proudly inherited, and to make its influence for good ever more and more known and loved.

Mr. Frank Dicksee, R.A., said he had been asked to propose a vote of thanks to the President for his very interesting and illuminating address, and he undertook the duty, though with no hope of adequately expressing either their pleasure or his own with the President's effort, but merely to express his own tribute of appreciation of what the President had said. He thought he ought to confine himself to this, for he had a little hesitation in approaching the subject of architecture. As a simple-minded painter, he might, perhaps, step in where architects fear to tread, because he knew there was such differences of opinion and aim that it was rather risky, even if one had fixed opinions, to adopt a side. He had been much interested in the address, and to those who were not acquainted with all that was going on in the architectural world it was most edifying to be informed in that short and summary way of the chief incidents of architectural activity of the year. What interested us in London especially was the Queen's Memorial, and he had had the pleasure of seeing the model that Mr. Brock had elaborated, and he felt confident that it would be one, when the whole thing was finished, of which Londoners would very justly be proud. Another subject that interested him very much was that of the education both of the architectural student and the public—the one, perhaps, much more difficult than the other—and he keenly sympathised with the attitude that the President took up with regard to the interchange of the three arts. He did not think that anyone in the profession had been more influential than Mr. Belcher in associating sculpture and architecture, and it was no fault of his if painting had not been included. He was quite sure that when Mr. Belcher had the opportunity he would admit the painter to the same privilege of sharing his triumphs as the sculptor already possessed. He thought it would be a very good thing if in our schools there should be an interchange of study on the part of the students. It was a thing which they had to a certain extent initiated in the Academy schools, where facilities were given the architectural student to study in the painting school or at least in the drawing school and the modelling school—and sculptors in the Painting School and Architectural School, and so on, and he imagined that there would be a great gain brought about by such a change in the ordinary course of study. But the education of the public was, he fancied, a much more difficult matter, and when there was such uncertainty amongst the leaders—amongst those men who should lead activity of thought in this matter—it was a little difficult for a complete outsider to know what to do. We were told that the beautiful Gothic art was dead. Well, he was almost afraid that that might be so. There was no doubt that for architecture to be really successful in its aim it must contain within itself the spirit of the time, and, alas! the spirit of these times was not that which would encourage Gothic art. What was the spirit of the time? Utilitarianism, science, and advertisement. Now utilitarianism was good; science was excellent—he did not think that that could be said of advertisement, but that was the most marked characteristic of the age, and any art expression we ventured upon had to fight this spirit of advertising, and it was a very serious drawback to the expression of any form of art, for instead of being helped by the spirit of the age it was hindered. He thought that if that were made clear to the public—*i.e.*, that it was not those who shrieked the loudest who were the most worthy of attention—it might lead gradually to the formation of better taste on the part of the public, for he was perfectly sure that there was an immense amount of talent in this country which needed only encouragement to fulfil all manner of enterprises which would strengthen and beautify the nation in every way. If we could so enlarge our sympathies that we were not bound to be only Gothic or only Renaissance, or only Classic, but to have a sufficiently wide sympathy for all these various expressions of art, to understand them all, and then in times of judgment to decide which was the best expression for the particular instance contemplated. He most bitterly regretted that Newgate Prison had gone, for it was a splendid bit of work, and you had only to look at it to know it was a prison; it bore the stamp of what it was Of course he should be sorry to see many of those Newgates about. If we wanted to build something of the kind now, that manner of architecture would be out of date, but for that and some things it seemed to be the best possible He hesitated to speak about Gothic art, for to

him in its day, when it contained within itself the expression of the life of the people, it was the most beautiful architecture of the world. The mystery of it and the religious sense which it awakened, and the way it gloried in the magic of colour and stained glass made it, take it all in all, the most beautiful expression of architecture that the world had ever seen; but to attempt any ambitious work in Gothic art now was risky, although in competent hands it was still possible to have a most beautful expression of art conveyed even in modern Gothic. He desired to pay a tribute to the President, for it seemed to him that the essential principle that the President had placed before him was devotion to beauty. It was Emerson, he believed, who said that, "Though we travel the world over to find the beautiful—we must carry it with us, or we find it not." It seemed to him that that was what Mr. Belcher had done: he had carried the sense of the beautiful with him wherever he had gone, and that, combined with his loyal endeavour to combine the arts of painting and sculpture with architecture placed him in a position which commanded their greatest admiration and respect, and they were proud that such a man should be placed at the head of an Institute like that—with his great capacity in his art, his devotion to beauty, and his keen enthusiasm for the welfare and fame of a profession which in dignity and worth should be second to none.

Sir Benjamin Baker, K.C.M.G., said his only qualification and his only excuse in seconding the vote of thanks was that he was a very old and very appreciative friend of their President. He had watched Mr. Belcher's career, and he was especially pleased to see him in the position which he occupied that night, which would do honour to himself and be of great benefit to the Institute. The President had touched on many topics, and in his work he illustrated that he was not only a preacher, which was generally dull work, but he followed out his own maxims, and he thought that the works of Mr. Belcher would do more to educate the public in the way he desired than his address. He quite agreed with the vision of a wilderness of mean streets that the President had spoken of as a hopeless problem to attempt to solve. In connexion with the Traffic Commission he had lately been a good deal in the suburbs of London just to see where the people sprung from and where they had to go to be accommodated. It was not that matter that had most interested him in the President's address, but rather what was said as to the vicious extravagance in material and so-called ornamentation, and that was most prominent in the extreme East End, and particularly near the Angel, Islington—an extravagance that dominates the whole world at the present time. How could they hope for art to be dominant when they saw women dress as they do in some parts of London, with their artificial pearls, for instance, which would be worth 10,000*l.* in individual cases if they were real. It made one shudder almost, and it was not confined to London and the cities of England. In Ireland some twenty-five years ago if one saw a donkey cart with a pretty girl in it the girl had no head covering at all; she had a shawl, and that was drawn up to cover her head if it rained. That was not the case now, and you never could tell what a girl would dress in, and all the joy was taken out of the thing. That being so, the problem of educating the public was a most difficult one. He could not imagine how Greek architecture or sculpture would have fared if the Greek women had dressed like that, and how the difficulty was to be got over he did not know. He might paraphrase a remark he heard the Italian Ambassador say on a similar occasion: Since my boyhood I have been married to science, but I am a lover of art, and that must be my excuse. The President happily occupied a middle seat between art and science, and in his work he combined both.

Mr. Graham then put the vote of thanks to the meeting, and it was very heartily agreed to.

Mr. Belcher, in reply, said that they had heard two most distinguished representatives of science and art. He felt that as science and art formed the component parts of good architecture, all that those gentlemen had said had been most valuable and interesting.

The President announced that the next meeting will be held on November 21, when a paper will be read on "Monolithic Constructions in Hennebique Ferro-Concrete," by Mr. L. G. Mouchel, and one by Mr. W. Dunn on "Construction and Strength of Reinforced Concrete."

The meeting then terminated.

THE LONDON BUILDING ACT.

The General Purposes Committee of the London County Council brought up the following report at the meeting of the Council on Tuesday:—

Standing Orders and Regulations under the London Building Acts.

"We have had under consideration the desirableness of advising the Council to make certain alterations in the standing orders and regulations under the London Building Acts so far as they relate to the submission of applications under the Acts, and to street naming and numbering. The alterations have been suggested by the Building Act Committee, and the late Historical Records and Buildings Committee have also approached us on the matter. The alterations suggested by the Building Act Committee are not intended to introduce any new practice, but simply to make clear to applicants what is required of them in the way of plans, particulars, etc., with a view to saving delay in dealing with applications. Many of the alterations suggested by the late Historical Records and Buildings Committee, are of a minor, and, in some cases, of merely a verbal character, but where they are of a more important nature, we draw special attention to them. . . . The new matter is printed in italics.

"Regulations as proposed to be amended, with reasons for amendment.

1. The full name and address of the person on whose behalf the application is made and the extent and character of his interest in the property *whether any portion of the site on which the building is proposed to be erected forms part of a disused burial ground*, and whether the property is freehold, leasehold, or copyhold, must be stated. Particulars must be furnished as to the nature of the application and the situation of the street, building or structure, and the purpose for which such building is required.

Formation and laying out of new streets—Adaptation of ways for streets and widenings of streets, etc., section 7 and section 10 of the 1894 Act.

2. *Each street must be marked on the plans with a number, and referred to in the application as Street No. 1, Street No. 2, etc.*

In the event of the application being sanctioned, two additional copies of the plans will be required, *and the intended name of each street, identified by reference to the number of the street on the plans, must be submitted in accordance with section 32 of the Act of* 1894.

[NOTE.—Having regard to the time limit of one month imposed by the Act, in which objections must be made to names submitted for streets, it has been decided to require applicants to defer formally submitting names for approval until the Council has sanctioned the formation of the streets. The alteration is made with a view to identifying the streets for which the names are intended.]

Buildings (a) within the prescribed distance, (b) in advance of the general line of buildings, etc., section 13, section 17, and section 22 of the 1894 Act, and sections 3 and 4 of the 1898 Act.

3. Plans must be to a scale of 22 ft. to the inch, and must show the situation of the building in relation to others adjacent, *to a sufficient extent to show the frontage of the street on either side of the site.* The height and precise distance from the centre of the roadway of the proposed building and the width of the street are to be figured.

In the case of applications under section 13 (5), the extent and height of the old buildings on the site must be shown to the same scale, *and a copy of the plans certified by the district surveyor, together with the originals, should be forwarded. The original certified plans will be returned after being compared with the copy.*

Recesses and openings in external walls and recesses in party walls, section 54 of the 1894 Act.

4. Plans of the floors of the building and an elevation of the wall in which the recesses or openings occur to a scale of *one-eighth of an inch* to the foot. *The sizes of the recesses and openings must be figured.*

Additional cubical extent, section 76; and buildings for the supply of electricity, section 203 of the 1894 Act.

5. The use to which the various parts of the building are intended to be put is to be indicated, *also the positions and numbers of any hydrants or other fire extinguishing appliances proposed to be provided*, and any points bearing upon the question of liability to fire.

Naming of streets and numbering of houses—Part IV. of the 1894 Act.

6. *In numbering houses the rules to be observed are as follows:*

St. Paul's Cathedral is recognised as a central point; and the numbering of houses begins at the end or entrance of the street nearest that building, except where a street leads from a main thoroughfare to a less important street, and then the numbering *starts* from the main thoroughfare.

Taking, therefore, the sides of a street as left and right (assuming that the back is towards St. Paul's) the odd numbers will be assigned to the left-hand side and the even numbers to the right-hand side.

Under section 36 of the Act, the Council has the power to order "that any houses or buildings in any street or way or any part thereof shall for the purpose of distinguishing the same be marked with such numbers as they shall deem convenient for that purpose." Great inconvenience and expense in renumbering would frequently be saved if the above rules were observed in the first instance.

7. No name is to be used for a street unless with the approval of the Council *previously given*, and it should be a name consisting of one word with *or without* the addition of "street," "road," or other like term.

[NOTE.—This alteration is necessitated by the practice of the Council to approve the use of single names (*e.g.*, "Aldwych," "Kingsway," etc.) for streets.]

8. Only such *thoroughfares as may be deemed to be of sufficient length or importance may* be designated "roads."

The Council will be prepared favourably to consider the use of the terms "avenue" and "grove" conditionally upon the planting and maintenance of suitable trees in the streets in question; other descriptions, such as "gardens," "crescent," "square," etc., may be used only when the terms seem appropriate.

[NOTE.—These alterations are made in order that the Council may have a wider discretion in allowing the use of such terms as "road," "avenue," where they seem appropriate.]

9. The name should be one that is not already in use within the county; *it should, if possible, be in some way associated with the locality.*

The Council's list of streets and places in the Administrative County of London, together with an office list of available names, arranged under the districts for which they are appropriate, may be consulted by applicants.

10. *Applicants proposing names for large blocks of buildings, e.g., artizans' dwellings, mansions, flats, etc., should have regard to the rules which apply to the naming of streets.*

The Council should be notified of every name intended to be used as a postal address.

[NOTE.—This alteration is made with a view to controlling, so far as may be possible, nomenclature of large blocks of buildings.]

Any person or persons setting up any name to any street in London until the expiration of one month after notice of the intention to set up the name has been given to the Council, or setting up any name objected to by the Council under section 32 of the Act of 1894, is liable to a penalty of 40s., with a continuing penalty of 40s. for every day on which the offence continues after conviction.

[NOTE.—This new paragraph is inserted for the purpose of drawing attention to the illegality of setting up names for streets other than those approved by the Council.]

Conditions upon which applications may be granted.

Standing orders as proposed to be amended.

11. That no building shall be commenced to be erected upon either side of such roadway, or upon a site abutting upon such roadway, unless such roadway shall have been and shall still remain so defined and thrown open as aforesaid, and unless such roadway shall have been and shall still remain so made as regards levels, direction, width, and gradients throughout as to comply with the provisions of any statutes and by-laws in force in London regulating streets and buildings, and unless such roadway shall also have been so made and shall still remain as to accord with the plans and sections attached hereto and the particulars which accompanied the application for the sanction contained in this order, and unless the name of the street *has been approved by the Council, and as so approved shall have been affixed and shall be retained at both ends of the street.*

[NOTE.—This alteration, to the need for which attention has been drawn by the solicitor, is to ensure that the approval of the Council to the suggested name is obtained, and that the name actually approved is affixed and retained.]

Naming and numbering of streets—Part IV. of the 1894 Act.

Names submitted for new streets are to be communicated to the local authority in whose district the streets are situated, with a request that they will inform the Council within fourteen days of any observations which they may desire to make thereon.

[NOTE.—New paragraph to give official sanction to the present practice.]

12. Immediately after the making of an order for the renaming of any street, an intimation thereof is to be sent to the Post Office authorities, *and to the superintendent registrars of births and deaths for the districts in which the streets are situated.*

A notification of names approved for new streets, and of orders made by the Council for the renaming of streets and the renumbering of houses, is also to be sent to the proprietors of Kelly's directories.

[NOTE.—New paragraph to give official sanction to the present practice.]

With regard to the proposed alterations in the standing orders as to notice of a new name for a street (No. 7 in the table), the Historical Records and Buildings Committee considered it desirable that power should be delegated to them by the Council to enable them to make formal objection, on behalf of the Council, under section 32 of the London Building Act, 1894, to any name intended to be given to a street. Section 32 of the Act is as follows: "Before any name is given to any street, notice of the intended name shall be given to the Council, and the Council may by notice in writing given to the person by whom notice of such intended name has been given to them at any time within one month after receipt of such notice object to such intended name, and it shall not be lawful to set up any name to any street in London until the expiration of one month after notice thereof has been given as aforesaid to the Council or to set up any name objected to as aforesaid."

It will be seen that the period within which the Council has power to object under this section is limited to one month. This period has in practice, we understand, proved to be altogether insufficient, and in the great majority of cases, owing to the time occupied in bringing applications before the Committee and the Council, the time limit has elapsed before the notice of objection could be given. We concur in the Committee's suggestion, and have prepared a draft order of reference accordingly so as to provide that the Local Government, Records and Museums Committee, who have taken over these duties since the reconstitution of committees in March, 1904, shall exercise the powers

of the Council under the section in question. We recommend :—

(*a*) That the regulations, rules, and standing orders under the London Building Act, 1894, and the London Building Act, 1894 (Amendment) Act, 1898, adopted by the Council on May 16, 1899, be rescinded.

(*b*) That the regulations, rules, and standing orders under the London Building Act, 1894, and the London Building Act, 1894 (Amendment) Act, 1898, set out in the appendix to the report of the General Purposes Committee, dated October 24 and 31, 1904, be made.

(*c*) That an addition to the order of reference to the Local Government Records and Museums Committee be made as follows :—

The Committee shall exercise the powers of the Council under section 32 of the London Building Act, 1894."

[The appendix and standing orders follow. The recommendations were agreed to.—ED.]

The Building Act Committee brought up the following report, the consideration of which, however, was adjourned until next week :

LONDON BUILDING ACTS AMENDMENT.

"The Council on June 14, 1904, on the recommendation of the Building Act Committee, instructed the Parliamentary Committee to prepare a Bill for introduction into Parliament in the session of 1905 to amend the provisions of the London Building Acts. It may be well to briefly indicate the steps which led up to this decision. The Council, on November 4, 1902, resolved to introduce into Parliament a Bill to amend the provisions of the London Building Act, 1894, relating to safety from fire. Subsequently on March 3, 1903, the Council decided, on the recommendation of the Parliamentary Committee, not to proceed with the Bill, but to refer it to the Building Act, Fire Brigade, and Parliamentary Committees with a view to their advising the Council, after consultation with such persons and authorities as might be desirable, as to the ultimate form the Bill should assume. The Bill referred to dealt only with the question of safety from fire, and left untouched many other important questions with respect to which the London Building Acts had been found to need amendment, and as the Council had decided that this Bill should not be proceeded with in the Session of 1903, we felt strongly that any amended Bill should aim at securing all the amendments required in the London Building Acts. It was not, however, found practicable for three Committees to prepare the material for a Bill of this character, and the Council, on May 26, 1903, on the recommendation of the Committees concerned, rescinded the resolution referring it to those Committees, on the understanding that the Building Act Committee would proceed with the preparation of proposals for securing all the amendments required in the London Building Acts. We accordingly devoted much time and attention to this task, and, in connexion therewith, we have considered suggestions made by the Fire Brigade, Highways, Improvements, Local Government, Main Drainage, Public Control, and Public Health Committees of the Council, by the majority of the metropolitan borough councils, and by the Royal Institute of British Architects, the Institution of Civil Engineers, the Surveyors' Institution, the District Surveyors' Association, and many other bodies. We have also considered all the cases illustrating the weak points in the present Acts which have been noted by the Building Act Committee since 1894, and, in addition, the by-laws and Acts in force in the principal provincial towns, and the by-laws in force in the urban districts round London have been studied with a view to extracting any provisions that might be valuable in London. As the result, we have obtained valuable material for the amendment of the Acts, and on June 14, 1904, we submitted a report to the Council indicating in very general terms the object of our proposals, and stating that we would submit details at a later date. We have now fully completed our proposals, and are in a position to submit the details to the Council. The greater number of our suggested amendments were communicated to the Parliamentary Committee on June 13, 1904, to enable the preparation of the Bill to be proceeded with, and the remaining suggestions have since been communicated. A draft Bill, embodying nearly all the suggestions put forward, was furnished to us at our request by the Parliamentary Committee immediately after the conclusion of the summer recess. We have completed our consideration of the draft Bill, and have submitted our observations thereon to the Parliamentary Committee. It therefore appears to us that, although the work involved in the introduction of the Bill is necessarily very great, there is no obstacle to its being introduced in the next Session of Parliament if the Council approves of the principles of the proposed amendments. We may remind the Council that the Bill of 1903 was the outcome of the action of the Home Secretary, who, in August, 1902, wrote to the Council stating that, in view of the facts disclosed at the inquest on the Queen Victoria-street fire, he thought that the question of further legislation on the subject of safety from fire in high buildings required early consideration that, in his opinion, the matter could not be adequately dealt with by a mere extension of the powers of the Council under the Factory and Workshop Act, 1901, and he was therefore disposed to think that any new legislation should take the form of an amendment of the London Building Act, 1894; that, as this Act was a local Act, any amendment of its provisions would naturally be by a private Bill promoted by the Council, and that he would be glad to assist in any proposal that might be made for that purpose next Session so far as it might be possible for him to do so. The Home Secretary subsequently informed the Council that he would have no objection to the extension to existing buildings of the clauses with respect to means of escape from fire, under proper conditions, and in suitable cases, provided adequate provision were made for allowing the owners or occupiers of existing buildings an appeal to an arbitrator or to some other tribunal. Our present proposals, while extending over the whole of the London Building Act, embody those contained in the 1903 Bill, with considerable modifications, which we have made with a view to meeting, as far as was reasonable, the criticisms which were passed on the Bill. Before submitting details of the proposals it may be well to very briefly outline the more important amendments suggested by us :—

Outline of the most important proposed amendments.

Formation and widening of streets.—To give the Council greater powers with regard to the formation of new streets and the adaptation of ways to streets; to widen existing streets by restricting except under certain conditions, the height of dwelling-houses erected in narrow ways and streets, and the height of buildings, erected on the site of previously existing buildings, within a certain distance from the centre of the roadway.

Building line.—To enable the Council to determine the future building line in any street, so as to facilitate the gradual widening of congested thoroughfares, and to make new streets, where necessary, to continue such widened thoroughfares, or to afford through communication.

Open space about, and lighting and ventilation of, buildings.—To increase the amount of space at rear required for new dwelling-houses; to improve the lighting and ventilation of habitable basements, and of rooms which derive light and ventilation only from a court within a building.

Means of escape in case of fire and reduction of risk of fire.—To require the provision of means of access to the roof in every building of more than one story, and exceeding 25 ft. in height; to reduce the height above which the provision of special means of escape can be required in the case of certain new high buildings, and, after a certain date, the application of similar provisions to certain existing high buildings; the provision of means of escape from certain new, and, after a specified date, existing, buildings in which more than a certain number of persons are employed, or in which sleeping accommodation is provided for more than a certain number of persons; additional powers in regard to premises used in part for the purposes of trade or manufacture, and in part as dwelling-houses, especially where the part used for trade projects from the front of the building (as, *e.g.*, in a one-story shop; to provide that consent shall not be given to the erection of a building to a greater height than 80 ft. unless the Council is satisfied that proper arrangements can be made and maintained for lessening danger from fire; powers to regulate the use of matched-boarding and panelling as an internal finishing to walls, etc., and the enclosing of lifts in buildings; and to protect in new buildings of the warehouse class windows which are within 30 ft. of openings in other premises.

Construction of buildings.—To make certain amendments in the provisions of the Act relating to construction of buildings with a view to reducing risk of fire; to enable the Council to consent (*a*) to the cubical contents of buildings to be used for trade or manufacture being of any dimensions that the Council may deem it expedient to permit (at present the Council cannot consent to buildings of greater dimensions than 450,000 cubic ft.); (*b*) to the uniting of buildings under proper conditions (at present buildings may not be united except where they are wholly in one occupation or are constructed or adapted to be so); and to make rules with regard to the use of iron and steel construction in buildings.

Buildings on low-lying land.—To strengthen the provisions of the Act relating to the erection of buildings on low-lying land.

District Surveyors.—To amend the powers of the Council with regard to district surveyors so as to enable the Council to introduce a proper system of payment by salaries instead of fees at any time it should see fit to do so, provision being made for the compensation of any district surveyors retired in consequence of the introduction of such a system; also to amend the fees payable in certain cases to district surveyors.

By-laws.—To enable the Council to make by-laws with regard to the demolition of buildings, the control of scaffolding and machinery, the use of iron and steel construction in buildings, and the erection of buildings on unsuitable sites.

Tribunal of Appeal.—To alter the constitution of the Tribunal of Appeal.

It is extremely difficult to give in a succinct form full details of every proposed amendment to an Act of such a technical character as the London Building Act, and we do not think the Council would desire us to attempt the task. The Parliamentary Committee have, however, informed us that they do not feel justified in proceeding with the introduction of the Bill until they shall have received detailed instructions as to procedure, and we therefore submit for the consideration of the Council the following particulars of our proposals :—

Details of proposed amendments to the London Buildings Acts.

Definitions.—To extend the application of certain expressions, and to define certain terms not at present defined.

Formation of streets.—To amend the provisions as to what constitutes a commencement to form or lay out, or adapt a way to, a street.

To enable the Council in the case of new streets or the adaptation of ways to streets :—

(*a*) To require a greater width than at present; lateral communications; reservation of land to form street or formation of street for connexion with an adjoining estate; connexion with an existing street; protection of streets proposed to be formed on land at a different level to land immediately adjoining on either side.

(*b*) To alter the position, direction, or level of any intended new street in order to make more direct communication.

(*c*) To prevent the formation of *culs-de-sac*.

(*d*) To secure an equitable incidence of the cost of paving and making up streets.

To enable the Council to control the formation of back streets, and to require the formation of such streets where considered desirable.

Widening of streets.—To prohibit, except under certain conditions, the erection in ways laid out for foot traffic only of dwelling-houses of a greater height than the width of the way.

To enable the Council to require without payment of compensation a greater width than 20 ft. from centre of roadway where premises are to be used for business purposes.

To provide that in cases of rebuilding no increase in height over that of the previous building on the site shall be permitted unless the owner gives up to widen the road a strip of land of a width proportionate to the increased height of the building.

To prohibit the extension of any existing building within the prescribed distance without the consent of the Council.

To prohibit the erection without the consent of the Council of any dwelling-house within a distance of 20 ft. from the centre of the roadway to a height exceeding the distance of the front or nearest external wall of such building from the opposite side of such street. (At present this restriction applies only to "dwellings for the working classes.")

To make it clear that the existence of an irregular building or structure within the prescribed distance from the centre of the roadway does not confer a right to erect any building on the site thereof.

To require that certified plans of old buildings within the prescribed distance shall be made before demolition in cases where the owner demolishes the building, and that such plans shall show the extent and height and nature of construction of buildings or structures in their several parts.

General Line of buildings.—To prohibit the extension or raising of any existing building, beyond the general line, without the consent of the Council.

To make the right to re-erect a building beyond the general line, subject to plans being certified by the district surveyor, and to require such plans to be made before demolition in cases where the owner demolishes the building, and to show the extent and height and nature of construction of the old building or structure in its several parts.

To make further provision for securing the removal of buildings unlawfully erected in advance of the general line on the lines of the power now possessed by the Council with regard to prescribed distance.

To prohibit, without the consent of the Council, the erection of a building to the same line as that of a building previously sanctioned by the Council in advance of the general line, unless land, in a line with that required to be dedicated under the previous consent, be dedicated to the public use.

To enable the Council to control the line to which buildings may be erected where the general line has been destroyed by the demolition of buildings.

To make the Council the authority for giving the final permission for the erection of bridges and similar projections across public streets.

To provide that all retaining walls and buttresses of railways shall be set back to the general building line; and that in no case, except with the consent of the Council, shall there be less than 50 ft. in the clear between such walls or buttresses.

To make it clear that buildings erected under consents granted by the Council's predecessors shall not affect the general line.

Power to determine a building line.—To provide that the building line in any new street (not being within two miles of St. Paul's) shall not be nearer to the centre of the street than 35 ft. without the consent of the Council.

To enable the Council to define a building line on either or both sides of any important street or way, such building line not being at any point more than 75 ft. distant from the centre of the roadway of such street or way.

To provide that no building or structure shall without the consent of the Council be erected or extended either above or below the level of the highway adjoining the same beyond the building line defined by the Council.

To provide that the Council may upon payment of compensation require any building or structure projecting beyond the building line defined by the Council to be set back to such line, and that the Council may enter upon, take, and use the whole, or any part of any lands, buildings, or structures in advance of the line defined.

To provide that the land between the building line defined by the Council and the centre of the roadway shall, to such extent as the Council may by order declare, be deemed to have been dedicated by the owner thereof, and shall be left open for the use of the public and form part of the public way.

To provide that the Council may form, lay out, and construct any street as a continuation of any street or way, in respect of which the Council has put in force the powers of defining a building line, for the purpose of affording through communication between different parts of the metropolis.

To provide for settlement of questions of compensation and for the necessary machinery for the Council to exercise the powers sought to be obtained.

Naming of streets and numbering of houses.—To enable the Council to give any name to, control the naming of, and rename, any way, part of a street or way, place, row of houses, or block of buildings.

To require the local authority and not the owner to set up the new name whenever the Council finds it to be necessary to change the name of any way, part of a street or way, place, row of houses, or block of buildings.

To require the occupier or owner to remove or obliterate any existing numbers or names abolished by the renumbering order.

To make various other minor and consequential amendments to facilitate the proper discharge of the Council's duties with regard to naming of streets and numbering of houses.

Open spaces about buildings, and lighting and ventilation of buildings.—To provide that factories, warehouses, etc., shall not be erected upon open spaces which are surrounded by dwelling-houses and upon which dwelling-houses would be prohibited on account of lack of air space.

To make better provision for the lighting and ventilation of habitable basements.

To require a certain amount of open space at rear to be provided to domestic buildings other than dwelling-houses at ground level in old streets when rebuilding.

To require provision of open space about all domestic buildings not abutting upon a street.

To provide for the maintenance at all times of the open space provided in accordance with the Act.

To provide that open spaces behind houses shall be larger than the present Act requires.

To require that sufficient open space shall be provided to allow of the means of access to the inspection chamber required under the Public Health by-laws for the purpose of disconnecting the drain from the sewer being placed outside the building.

To require the space at the rear of all buildings used solely for dwelling purposes, in streets laid out before the commencement of the Act of 1894, to be provided at the level of the adjoining pavement.

To require that courts for providing light and air shall be provided in the centre or interior of new buildings exceeding 150 ft. in depth.

To amend the provisions relating to courts for admitting light and air to domestic buildings so as :—

(*a*) To make a minimum provision for the ventilation to a court inclosed on every side.
(*b*) To make it clear that the window referred to in the provisions is intended to be a window provided to comply with the rules as to habitable rooms.
(*c*) To omit from section 45 of the Act of 1894 the provision that a court of which the greater dimension does not exceed twice the less dimension shall be held to comply with the section if a court of the same area, but square in shape, would comply therewith.
(*d*) To reduce the depth allowed for a court open on one side, and to make the rules as to windows to habitable rooms apply to any window to a habitable room, including a room in a basement.
(*e*) To limit the height of walls in which there are any windows, which are required to be provided by the rules as to habitable rooms, opposite to any land or building which is or is intended to be in a different occupation.
(*f*) To make the provisions relating to courts for admitting light and air to "domestic buildings" apply to offices and counting-houses.
(*g*) To make provision with regard to a window placed obliquely in a court or recessed.

Height of buildings.—To omit paragraphs 3 and 4 of section 47 of the Act of 1894, which provide that the prohibition against building to a greater height than 80 ft. shall not apply to the rebuilding to the same height as at present of any building existing at the passing of the Act of a greater height than 80 ft., or to the raising of certain existing buildings.

To provide that consents to the erection of buildings to a greater height than 80 ft. shall only be granted when proper arrangements can be made and maintained for lessening the danger from fire.

To provide that in new streets no building shall exceed in height the distance between buildings on opposite sides of the streets.

To make the provisions as to the height of buildings in streets of a less width than 50 ft. apply to streets formed before 1862 as well as to those formed subsequently.

To prohibit the erection and to control the height of buildings (other than domestic buildings) within a specified distance of buildings of the domestic class.

Means of escape in case of fire and reduction of risk of fire.—To provide that every building (both new and existing) of more than one story and exceeding 25 ft. in height shall be provided with means of access to the roof, and with a parapet or guard rail, where necessary to prevent persons slipping off the roof.

To alter the height above which stories have to be provided with means of escape in case of fire from 60 ft. to 50 ft., and to provide for the maintenance of the means of escape.

To require the provision and maintenance of means of escape from buildings (other than factories and workshops, coming within the provisions of the factory and Workshops Act, 1901, common lodging-houses and dwelling-houses occupied by not more than one family) in which sleeping accommodation is provided for more than twenty persons or in which more than twenty persons are employed.

To enable the Council to revoke its certificate, if necessary, in the event of change of user or alteration of premises increasing the risk of fire or of failure to satisfactorily maintain the means of escape, provision being made for Council to attach conditions to its certificate and for the imposition of penalties for breach of such conditions.

To prescribe the method of constructing internal staircases provided as a means of escape. (The provision of an internal staircase as a means of escape will not necessarily be required; other means of escape may be adopted.)

To apply the above provisions to existing buildings after seven years; to provide for referring disputed matters to arbitration, for an equitable division of the cost of the alterations between the freeholders and leaseholders, and for requiring buildings already having the certificate of the Council under section 63 of the Act of 1894, and being strictly in the same condition as when such certificate was granted, to provide only such additional means of escape as may reasonably be required, having regard to the alteration of the limit of height from 60 ft. to 50 ft., and for the plans to be supplied to be only such (if any) as are necessary to show the additional risks.

To require owners to submit plans of new buildings before the erection of such buildings is commenced, and of existing buildings within three years from the passing of the Act, and to provide for referring differences of opinion to arbitration.

To provide for the issuing of Orders by Petty Sessional Courts restricting the use of buildings or portions of buildings from which it is impracticable to provide adequate means of escape.

To provide that in buildings exceeding ten squares in area and used partly for trade and partly as a dwelling-house :—

(*a*) The two portions shall be separated vertically and horizontally by, and all passages and staircases and other means of approach from the street to the part used as a dwelling-house shall be inclosed with, and constructed throughout of, fire-resisting materials other than wood. (Passages, staircases will not necessarily have to be provided, see paragraph (*c*)
(*b*) The passages, staircases, etc., referred to in paragraph (*a*) shall be of a prescribed width proportionate to the frontage of the premises.
(*c*) *In cases where satisfactory means of escape are not provided from the sides, rear, or roof of the premises* a staircase and, if necessary, a passage inclosed and constructed as described in paragraph (*a*) shall be provided to the street from the part used as a dwelling.
(*d*) No part of the premises shall be at a greater distance than 80 ft. from a satisfactory means of escape.
(*e*) Doorways in walls of staircases and passages referred to in paragraph (*a*) shall be fitted with doors of fire-resisting materials.
(*f*) The use of wooden joists in conjunction with concrete pugging shall be allowed for the construction of fire-resisting floors.

To prohibit the use as living-rooms or workshops of rooms above, or directly communicating with, oil-shops without (1) the provision of adequate safeguards to prevent the spread of fire from the oil-shop to other parts of the premises, and (2) the provision of means of ready escape from such premises.

To prohibit the division of one shop into two or more shops except in an approved manner by fire-resisting materials.

To require that in buildings used partly for shop purposes and partly for dwelling, where the shop portion projects more than 5 ft. beyond the main front of the building, the roof of the projecting portion shall be fire-resisting; and *unless satisfactory means of escape are provided from the side, rear, or roof of the building*, that a passage or passages inclosed in fire-resisting materials shall be provided from the street to the staircase or other approach to the part used for dwelling, etc. (the width and number of the passages being proportionate to the frontage of the building to the street); also to control the position and construction of lantern lights to the projecting portion, and to allow of ventilating cowls of satisfactory construction.

To provide—

(1) That separate sets of chambers or offices or rooms contained in one building—

(*a*) Shall not be deemed to be separate buildings, and that the district surveyor shall not be entitled to claim fee as such.
(*b*) Shall, if contained in a building exceeding 20 ft. in height and 8 squares in area, be separated vertically and horizontally by fire-resisting materials other than wood.
(*c*) Shall also if contained in a building exceeding 25 squares in area have the floors of the lobbies, corridors, passages and landings, and the principal staircases of fire-resisting materials.

(2) That the principal staircases (in buildings with separate sets of chambers) shall be inclosed with incombustible materials not less than 3 in. thick, or, if in brickwork, not less than 4 in. thick, and that the doors leading on to the staircase shall be fire-resisting, or, if of deal, solid and not less than 2 in. in thickness, and that all glazing, if any, shall be fire-resisting.

(3) That no building containing separate sets of chambers or offices, etc., shall, without the consent of the Council, extend to more than 50 squares in area.

To provide that no doorway to or from a staircase, corridor, or passage-way in certain new public buildings shall be less than the width required in the Act for such staircases, etc.; also that all exit doors and barriers having fastenings shall, if fastened during the time the building is in use, be fastened during such time by automatic bolts only, so as to open by pressure from the inside, and to provide that the requirements as to bolts shall apply to existing churches and chapels.

To provide that every lift, etc., shaft (except those in dwelling-houses occupied by not more than one family) shall be constructed and inclosed to the satisfaction of the district surveyor in a prescribed manner, and that lift shafts reaching to the top of the building shall be carried through the roof and covered with thin glass protected on the outside with strong wire guards, and those not reaching to the top or down to the foundations shall be sealed at the top or bottom, or both, as the case may be, with fire-resisting materials; also that the doorways to the lift shafts shall be fitted with fire-resisting doors, and that these provisions shall apply to existing lifts after seven years.

To provide that boarding and panelling shall be so fixed as not to allow of any space between it and the wall, etc., to which it is fixed, and that it shall be a work within the provisions of section 145 of the Act of 1894.

To provide that all windows of new buildings of the warehouse class which are within 30 ft. of openings of other premises shall be protected in a prescribed manner so as to limit the danger of fire spreading, but so as not to prevent the entrance of firemen to any story above the ground floor.

To prevent the making of openings in the upper part of walls separating buildings within a certain distance above the roof of the lower building.

To provide that all constructional ironwork in buildings shall be protected by being encased to the satisfaction of the district surveyor in concrete, brickwork, terra-cotta, or metal lathing and plaster or cement not less than 2 in. in thickness.

To empower the Council to require the maintenance of proper arrangements for lessening danger from fire in buildings of large cubical extent.

To prevent the use of wooden joists pugged with concrete as a fire-resisting material for the construction of the floor over any room or enclosed space in which a furnace is fixed.

Construction of buildings.—To provide for and regulate the use of iron and steel construction in buildings.

To provide for an appeal to the superintending architect against the decision of the district surveyor on certain points of construction.

To provide that when two external walls abut, and roofs are constructed next such walls without proper parapets, such walls shall be carried up above the roof as though they were party walls.

To provide that not more than two stories shall be constructed in the roof of any building, but that the provision shall not apply to any story below a level of 80 ft. above the pavement, one side only of which story forms part of the roof.

To require that all staircases shall be adequately lighted.

To make the minimum height of habitable rooms (not wholly or partly in the roof) 9 ft., instead of 8 ft. 6 in., as at present, and the height of habitable rooms (wholly or partly in the roof) 8 ft. 6 in. instead of 8 ft., as at present.

To provide that the minimum space that shall be left between the ground and the underside of the floor joists shall be 6 in., and to require the provisions of openings for ventilation, the minimum size of such openings to be 9 in. by 6 in.

To provide that a habitable room constructed over a stable, coach house, or harness-room communicating therewith, shall be separated horizontally and vertically from the stable by a solid concrete floor or partition, finished smooth upon the surface, properly supported, and of a minimum thickness of 6 in.

To provide that if a construction under the public way, etc., other than an arch, be constructed of brick or stone it shall be done to the satisfaction of the district surveyor, but to exempt arches, etc., constructed by the Council in streets from the control of the district surveyor.

To provide that outside stairs or steps to a dwelling-house shall be protected with a balustrade or handrail, where necessary.

To provide for horizontal separation as an alternative to separation by party walls.

To enable the Council to control the formation of openings in external walls closely abutting on each other.

To require that windows at a height of over 25 ft. above the ground shall be constructed in such a manner as to admit of their being cleaned from the inside.

Temporary buildings and structures.—To make it clear what structures may be licensed, and to provide for the licensing of certain temporary buildings, by the metropolitan borough councils, to enable the Council to secure the removal, after a certain date, of existing irregular buildings, and to make certain minor amendments in the provisions with regard to temporary buildings and structures.

Dangerous and neglected structures.—To obtain power for the Council to immediately shore up or pull down dangerous structures in urgent cases.

To provide that expenses incurred in connexion with dangerous and neglected structure proceedings shall be a charge on the property, and recoverable from the owner for the time being.

To enable the Council to administer derelict property, the owners of which cannot be ascertained or have remained unknown for ten years.

To provide that no roof or part of a roof shall be used for storage of timber or of heavy materials unless specially constructed or strengthened for that purpose to the satisfaction of the district surveyor.

To provide that every roof of a new or existing building, and every balcony, etc., intended to be used for affording seating or standing accommodation for a number of persons, shall be safely constructed and secured, and provided with sufficient access and exits.

To prohibit the attachment of ropes, etc., across streets to buildings unless with consent of the borough council.

To prescribe that the period during which shoring erected upon the public way shall be permitted to remain be limited to one year, unless the Council consent to an extension of this period.

Dangerous businesses.—To prohibit the carrying on of dangerous business except under licence from the Council, and to enable the Council to impose conditions, and to charge a fee for such licence.

Low-lying land.—To make the provisions as to building on low-lying land apply to buildings erected on land which is so situated that the buildings cannot be efficiently drained at all times into an existing sewer of the Council.

District surveyors.—To make various detail amendments to facilitate action by the district surveyor for breaches of the Act.

To give the Council power to proceed, should it desire so to do, in cases where it is the duty of the district surveyor to take action.

To make the necessary amendments in the Council's powers with regard to district surveyors to enable it to introduce a proper system of payment of district surveyors by salaries.

To make certain modifications in the fees payable to district surveyors.

Tribunal of Appeal.—To increase the number of members from three to five.

To provide that one member (who shall not be a member of the Council) shall be appointed by the Council, that the fifth shall be a barrister of not less than ten years' standing, shall be chosen by the other four, and shall act as chairman of the Tribunal.

To provide that no architect or surveyor practising in London shall be eligible for membership of the Tribunal.

To restrict the powers of the Tribunal to the limitations of the section under which the appeal is made.

By-laws.—To enable the Council to make by-laws with regard to—

The erection of houses on excavated sites and on sites which are damp and have been heavily manured.

The nuisance caused by dust arising from the demolition of buildings.

The use of steel and iron construction.
Scaffolding and machinery.
The mode of naming streets and numbering houses.
Exemptions.—To remove or modify certain of the exempting provisions in the Act of 1894, and to add others if necessary.
Miscellaneous.—To enable the Council to sanction the cubical contents of buildings to be used for trade, or manufacture, or for any purpose which the Council may deem it expedient to permit, being of such dimensions as the Council may consider necessary.
To enable the Council to consent to the uniting of buildings under proper conditions, and to make certain alterations in the requirements for doors fitted to openings in party walls.
To enable the Council to require the removal of existing signs.
To regulate the construction of boards, frames, etc., affixed to external walls of buildings for the purpose of advertisement.
To control flaps, cranes, etc., which only project from buildings when actually in use.
To provide that posts at the entrance to narrow courts shall be hinged so as to allow of the passage of fire-escapes, and to apply this provision to existing passages.
To extend the time within which the Council can take proceedings to twelve months.
To provide machinery for enforcing the Act on exempted buildings when exemption ceases.
To provide that notice shall be given to the borough council of intended building operations, and that the borough council shall be entitled to inspect the plans of the work.
To provide that where an old building is taken down or destroyed for more than half its cubical extent, the remaining portion of the building shall be demolished or made in all respects to conform with the provisions of the Act.
To transfer to the borough councils the powers, duties, and liabilities of the district surveyors as regards the supervision of the construction and the inspection of the electric lighting boxes and similar constructions under the public way, except in regard to property of Government and municipal authorities.
To make it an offence to use for more than three consecutive days or nights, or more than three single days or nights, in any one calendar month any building as a public building which has not been constructed in accordance with the provisions of the Act as to public buildings.
To prohibit the continuous employment of persons in rooms or basements not constructed in accordance with the rules of the Act as to habitable rooms or basements.
To prevent the use of a building for any purpose which would render it, while so used, not in conformity with the Acts.
To provide that buildings which have been erected for one purpose shall not be used for any other purpose, unless, and until, the sanction of the Council shall have been obtained thereto.
To render void old "consents" and "orders" not acted upon within a period of two years from the passing of the Act.
To give power to district surveyors to cause removal of improper building materials from a site, with a view of preventing the use of such materials in the erection of a building on such site.
To provide for the appointment of practical inspectors of all plant, machinery, and scaffolding used in connexion with the erection of buildings, and to enable the Council to control such plant, machinery, etc.
To empower the Council to require the fencing of land unbuilt upon.
To provide power to secure the removal of any walls, etc., obstructing communication between streets.
To require the sides of excavations to be properly and sufficiently shored up as the work is proceeded with.
To make additional provisions with regard to the storage of timber.
To prevent any interference with the foundations of buildings after construction in such way as to weaken the building.
To provide that for domestic buildings external walls may be constructed as hollow walls if such walls be constructed in accordance with certain rules, such rules to be specified.
To make provisions for the construction of retaining walls and boundary fence walls and party fence walls exceeding 7 ft. in height.
To make it clear that in cases where the external or forecourt wall of a building is set back the prescribed distance from the centre of the street, or where the Council has consented to the erection of a building upon condition that the land in front shall be given up to the public, the land separating the building from the public way is to form part of the public way.
To provide that the local authorities shall take over and make up roads and pave footways within a reasonable time of the formation of the roads.
To provide power for local authorities to alter to the level of the footway, and to prevent the obstruction of, forecourts left open, but not dedicated to the public.
To provide for registration at the Land Registry Office of covenants containing clauses as to giving up land to the public way.
To obtain power to prevent the erection of irregular structures, signboards, etc., on forecourts.
To revise the schedule of fire-resisting materials.
To make any amendments consequent on the foregoing proposals and certain other amendments of detail, which have been sent to the Parliamentary Committee, but have not been specifically referred to above.

The efficient amendment of the London Building Acts is a matter which admits of no delay. The older parts of London are being rebuilt with startling rapidity; the vacant spaces remaining are being covered with buildings. Existing low buildings of one or two stories are being rebuilt to the utmost height (80 ft.) permitted by the law. Open spaces at the rear of buildings are being covered over so that practically little or no air space remains. It therefore becomes a matter of great importance that wide streets should be made and a sufficient space at rear of buildings insisted upon. The subjoined table, which has been compiled from the information given in the Council's statistical abstract as to the number of houses rated and from the annual reports of the Building Act Committee, shows approximately the rapidity with which building is proceeding, and, unfortunately, future slums are in many cases being created—

NUMBER OF HOUSES ERECTED AND TOTAL LENGTH OF STREETS SANCTIONED DURING THE YEARS 1897-8 TO 1902-3.

——	1897-8	1898-9	1899-1900	1900-1	1901-2	1902-3
Approximate number of houses erected	4,774	3,597	5,287	The figures for this year are not comparable owing to the London Government Act, 1899, coming into force.	2,401	6,509
Length of streets sanctioned (in miles)	14	17	23	16¼	9½	15¼

	Houses.	Streets (in miles).
Total	21,435	95¾
Average (per annum)	3,573	16

RECOMMENDATIONS.

We recommend that in the Bill to amend the London Building Acts, which the Council, on June 14, 1904, resolved should be introduced into Parliament in the session of 1905, provision be made—

(1) To enable the Council in the case of new streets and adaptations of ways to streets—

(*a*) To require greater width, lateral communications, connexions with existing streets, reservation of land for connexions to adjoining estates and the formation of such connexions when required; protection of streets proposed to be laid out at a level different from that of the land immediately adjoining on either side.
(*b*) To alter the position, direction, or level in order to make more direct communication.
(*c*) To prevent the formation of *culs de sac*.
(*d*) To secure an equitable incidence of the cost of paving and making up.
(*e*) To control and require, where necessary, the formation of back streets.

(2) To facilitate the widening of existing streets by—

(*a*) Restricting, except under certain conditions, the height to which dwelling-houses may be erected in narrow streets and ways.
(*b*) Enabling the Council to keep back, without compensation, to a greater distance than 20 ft. from the centre of the roadway, buildings to be used for business purposes.
(*c*) Restricting, except under certain conditions, the height to which any buildings within 20 ft. from the centre of a street or way, etc., may be re-erected, and prohibiting the raising or extension of any such building without the consent of the Council.

(3) To strengthen the powers of the Council with regard to the erection and re-erection of buildings in advance of the general line of buildings; to enable the Council to control the line to which buildings may be erected where the general line has been destroyed by the demolition of buildings; and to provide that the building line in certain new streets shall not be within a certain distance of the centre of the street.

(4) To enable the Council to determine a building line on one or both sides of any important street at a distance not exceeding 75 ft. from the centre of the street; to acquire any buildings, land, or structures in advance of the line so determined, or to require any such buildings or structures to be set back to such line on payment of compensation; to provide that after the determination by the Council of such a building line no building or structure shall, without the consent of the Council, be erected or extended in advance thereof; to enable the Council to make new streets where necessary to continue a thoroughfare widened as aforesaid, or for the purpose of affording through communication, and to provide for the settlement of questions of compensation and for the necessary machinery to enable the Council to exercise the powers sought to be obtained.

(5) For certain amendments in the provisions relating to the naming of streets and numbering of houses in order to facilitate the discharge of the Council's duties with regard thereto.

(6) (*a*) To enable the Council to require the provision of space at rear in certain cases where it cannot now require it, and increased space at the rear of dwelling-houses, and to prevent the erection of buildings which are not subject to the provisions as to space at rear on sites which are surrounded by dwelling-houses, and upon which the erection of dwelling-houses would be prohibited for lack of air space.

(*b*) For requirements as to open space with regard to all domestic buildings not abutting upon a street.
(*c*) For the maintenance at all times of the open space provided in accordance with the Act.
(*d*) For the better lighting and ventilation of habitable basements and of rooms which have no windows directly opening on to the external air otherwise than into a court inclosed on every side or open on one side only.

(7) For means of escape in case of fire and reducing risk of fire by requiring all buildings (new and old) exceeding a certain height to be provided with means of access to the roof (guard rails being provided where necessary), by reducing the height above which means of escape can be required in new buildings, and applying the amended provisions to existing buildings after seven years; by requiring means of escape to be provided from new buildings in which there is sleeping accommodation for more than a certain number of persons, or in which more than a certain number of persons are employed (the provision to extend to existing buildings after seven years); by making provisions as to the construction of buildings containing sets of offices or chambers, and the size to which such buildings may be constructed; by requiring proper separation to be provided between the two portions of premises used partly for trade and partly as dwellings where such premises exceed a certain size, and the provision of means of escape (special provision being made in the case where the shop portion projects more than 5 ft.); to prescribe rules for boarding and panelling and for the construction of new lift shafts (except in certain dwelling-houses), the rules to apply to existing lifts after seven years.

(8) To enable the Council to consent to the uniting of buildings under proper conditions, and to the erection of buildings of such cubical extent as the Council may deem it expedient to permit, and to permit and make regulations for the use of iron and steel construction in buildings.

(9) For certain amendments in the provisions of the Act relating to the rights of building and adjoining owners.

(10) For wooden buildings of certain dimensions being licensed by the Metropolitan Borough Councils, and for enabling the Council to secure after a certain date the removal of existing irregular buildings.

(11) For certain amendments in the powers of the Council with regard to dangerous and neglected structures.

(12) To prohibit the carrying on of dangerous businesses except under licence from the Council, and to enable the Council to impose conditions, and to charge a fee for such licence.

(13) To make the provisions as to building on low-lying land apply to buildings used or to be used wholly or in part as dwelling-houses erected on land which is so situated that the buildings cannot be efficiently drained at all times by gravitation into an existing sewer of the Council.

(14) For increasing the number of members of the Tribunal of Appeal from three to five, for one member to be appointed by the Council, but not to be a member of the Council, and for the fifth, to be a barrister of not less than ten years standing, to be chosen by the other four, and to act as chairman of the Tribunal; also that no architect or surveyor practising in London shall be eligible for membership of the Tribunal, and that the powers of the Tribunal shall be restricted to the limitations of the section under which the appeal is made.

(15) For the necessary amendments in the Council's powers with regard to district surveyors, to enable it to introduce a proper system of payment of district surveyors by salaries, and to make certain modifications in the fees payable to district surveyors.

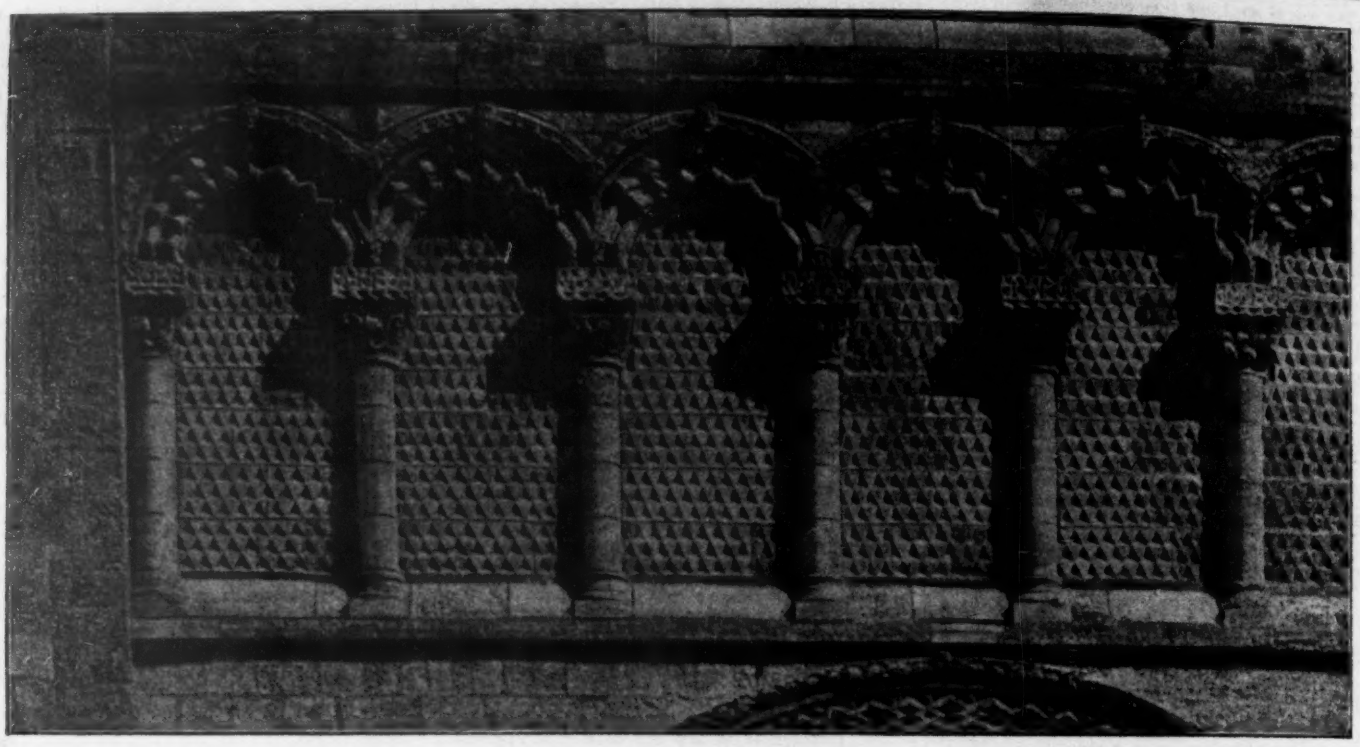
(16) For repealing, modifying, or adding to certain of the provisions in the Act of 1894, giving total or partial exemptions from the provisions of the Act.

(17) For the other amendments indicated in the foregoing report, but not specifically included in the foregoing clauses of the recommendation.

Notice has been given by Dr. Napier of the following amendment to recommendation No. 1 (to be seconded by Mr. Shepheard):—

"That, whilst fully recognising the necessity of amending, at an early date, the London Building Acts in many important particulars, the Council is of opinion that, having regard to the number and magnitude of the proposed amendments, to the fact that they have not been submitted to and considered by the professional and local authorities (in accordance with the practice hitherto adopted, and which the Building Act Committee in their report to the Council on June 14, 1904, implied would be done) and to the further fact that the proposals of the Council for legislation in the next session of Parliament are already both numerous and important, it is undesirable to proceed with the proposed amendment of the London Building Acts in the next session of Parliament; but that such proposals be referred back to the Building Act Committee for further consideration with a view to legislation being sought in the session of 1906."

ARCHITECTURAL PICTURE POSTCARDS.—Mr. H. R. Allenson sends us four packets of six picture postcards each, two consisting of views of "Wren's City Churches," two of them labelled "Old London Churches." Among the many subjects now used for picture postcards we are glad that architecture is not forgotten.



Arcading over West Doorway, Ouistreham.

Illustrations.

OUISTREHAM CHURCH.

WE give a view of the exterior of the fine Romanesque church of Ouistreham, a small seaside place on the north coast of France, some nine miles from Caen; and also separate illustrations of the west doorway, and of the arcading immediately over it.

The west end shows a very simple but effective decorative treatment by means of wall arcading; and though these are details differing considerably from those common in Norman architecture as transplanted to England, one may imagine the arcading of the west front to be a fair indication of what may have been the treatment of the space within the great arch of Tewkesbury front, before it was cut out to introduce the large late Gothic window.

There is nothing about it, indeed, comparable in boldness to the Tewkesbury arch, but the successive masses of the perfectly plain buttresses, seen in perspective in the view, have a very striking effect.

The church was to have been the subject of a special article in this issue, which had been duly written and posted but, by some accident, has not reached us.

PUBLIC OFFICES, HENDON.

THIS building has recently been erected on the north-west side of the Burroughs, Hendon.

The subjoined plan shows the principal floor.

On the ground floor the engineer's department and drawing-office occupy the south-east portion under the clerk's department, while the rate collector and accountant and the education clerk occupy the north-east portion, under part of the Council Chamber and Committee-room No. 2. The medical officer's department is situated under the members' library and Committee-room No. 1. The building inspector's office and materials testing-room are under the waiting-room, and in a one-story building projecting towards the north-west of the principal staircase. The caretaker's rooms are in the attics over the clerks' inquiry-office and spare room.

The facing bricks are new heather red-pressed bricks, supplied by the Heather Brick & Terra Cotta Company, Ashby-de-la-Zouch, Leicestershire; while Beerstone is used for the window dressings, entrance, etc. Permanent green slates are used in the roofs; the roof of the ventilating lantern is covered with copper and finished with a wrought-iron vane.

The contractors were Messrs. Thomas H. Kingerlee & Son, Oxford. The heating arrangements were carried out by Messrs. C. N. Haden & Sons, Cromer-street, W.C. The architect is Mr. T. H. Watson, and the drawing was exhibited at the last Royal Academy.

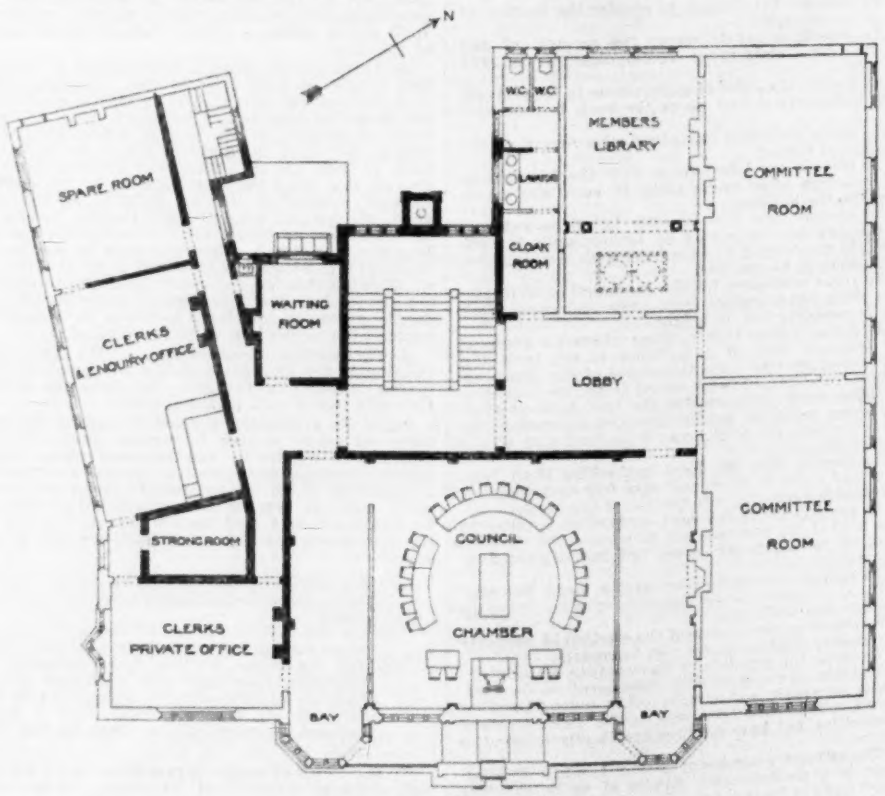
DECORATIVE DESIGNS FOR TEXTILES.

THESE four designs are by Mr. A. B. M'Donald, a student at the Royal College of Art.

Of the two upper ones, that on the left-hand side is for a printed silk, having seven colours on a white ground; to be reproduced by block printing. That on the right is also for a printed silk, but for roller printing, in four colours on a white ground.

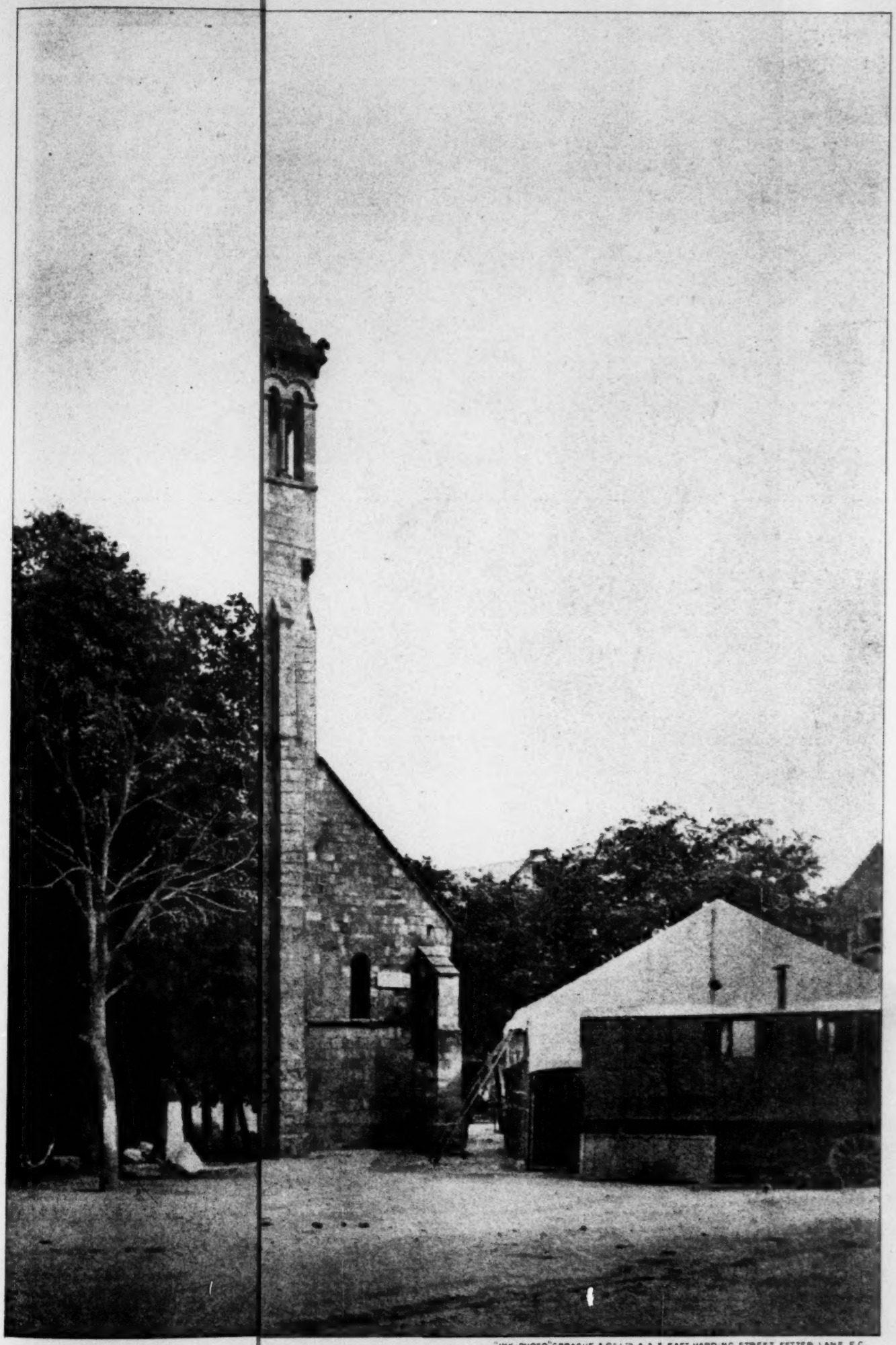
The left-hand lower design is for a chintz, acid printed on an indigo cloth; then five other prints, leaving long leaves, stems, and flowers partially white: roller printed. That on the right is a chintz in six prints; cones and stems white on a lilac ground: block printed.

POST OFFICE BUILDINGS, AUCHTERARDER, N.B.—The new Auchterarder post office will have a frontage to High-street of 42 ft. It will be three stories in height, the ground floor being utilised for the post office and a shop, and the other two stories for a dwelling-house. There will be an entrance at the back for the receiving and despatch of mails. The shop will have a saloon at the back, and the dwelling-house will consist of eight apartments, with bathroom, etc. The plans have been prepared by Mr. James Marshall, architect, Perth, and the whole work will be carried out under his supervision.



PLAN OF PRINCIPAL FLOOR

Public Offices, Hendon.



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BUILDINGS, AUCHTERARDER, N.B.

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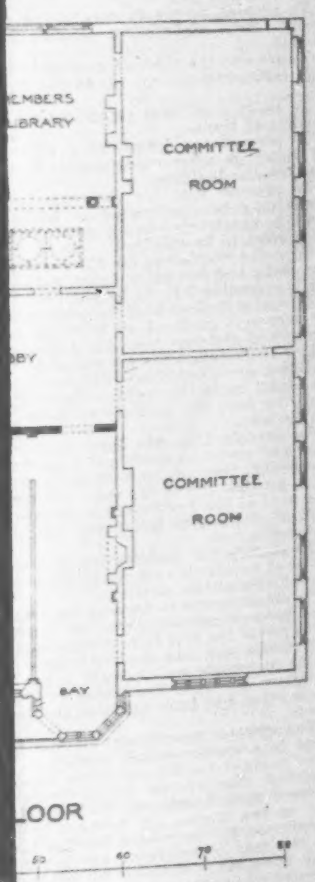
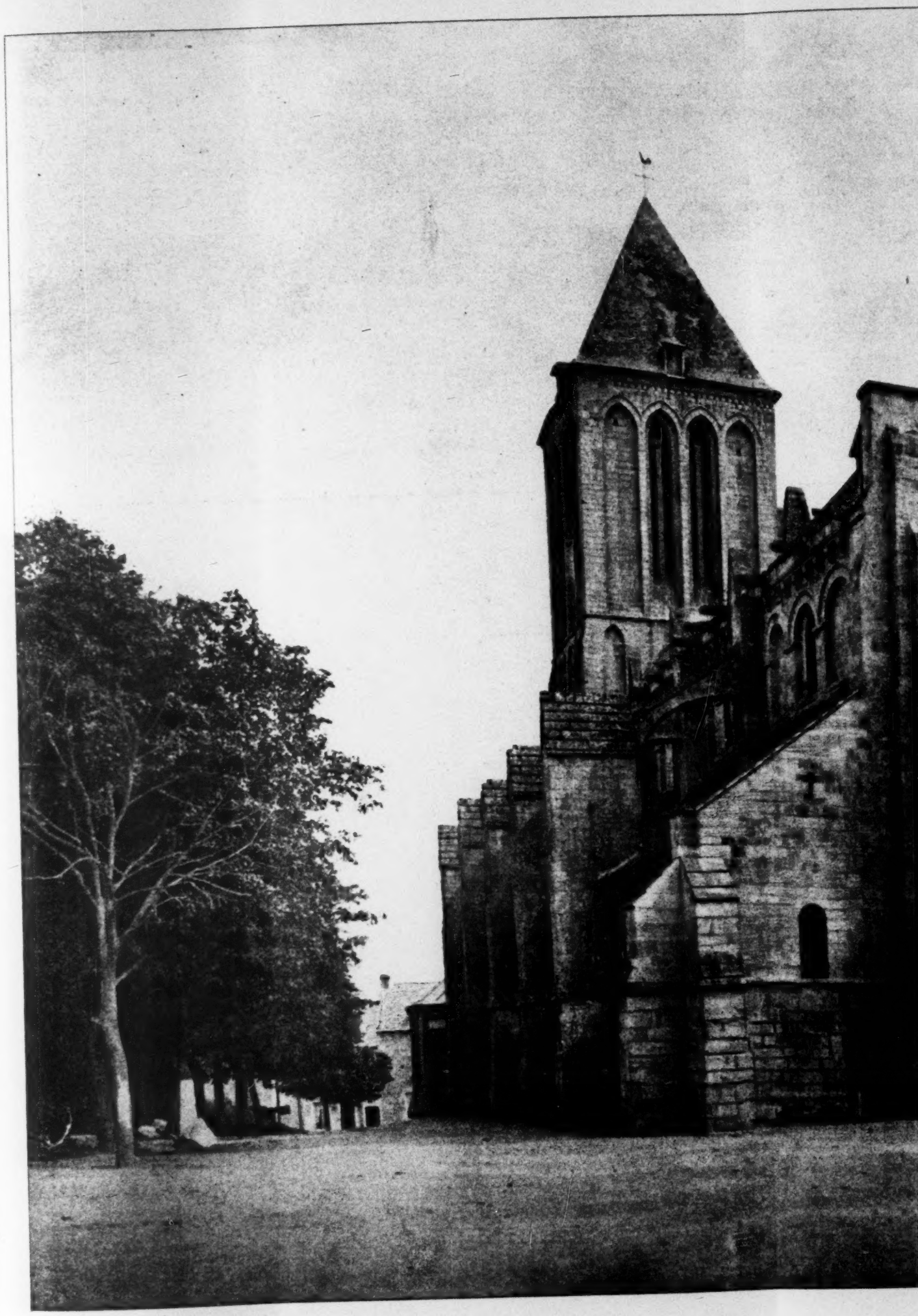
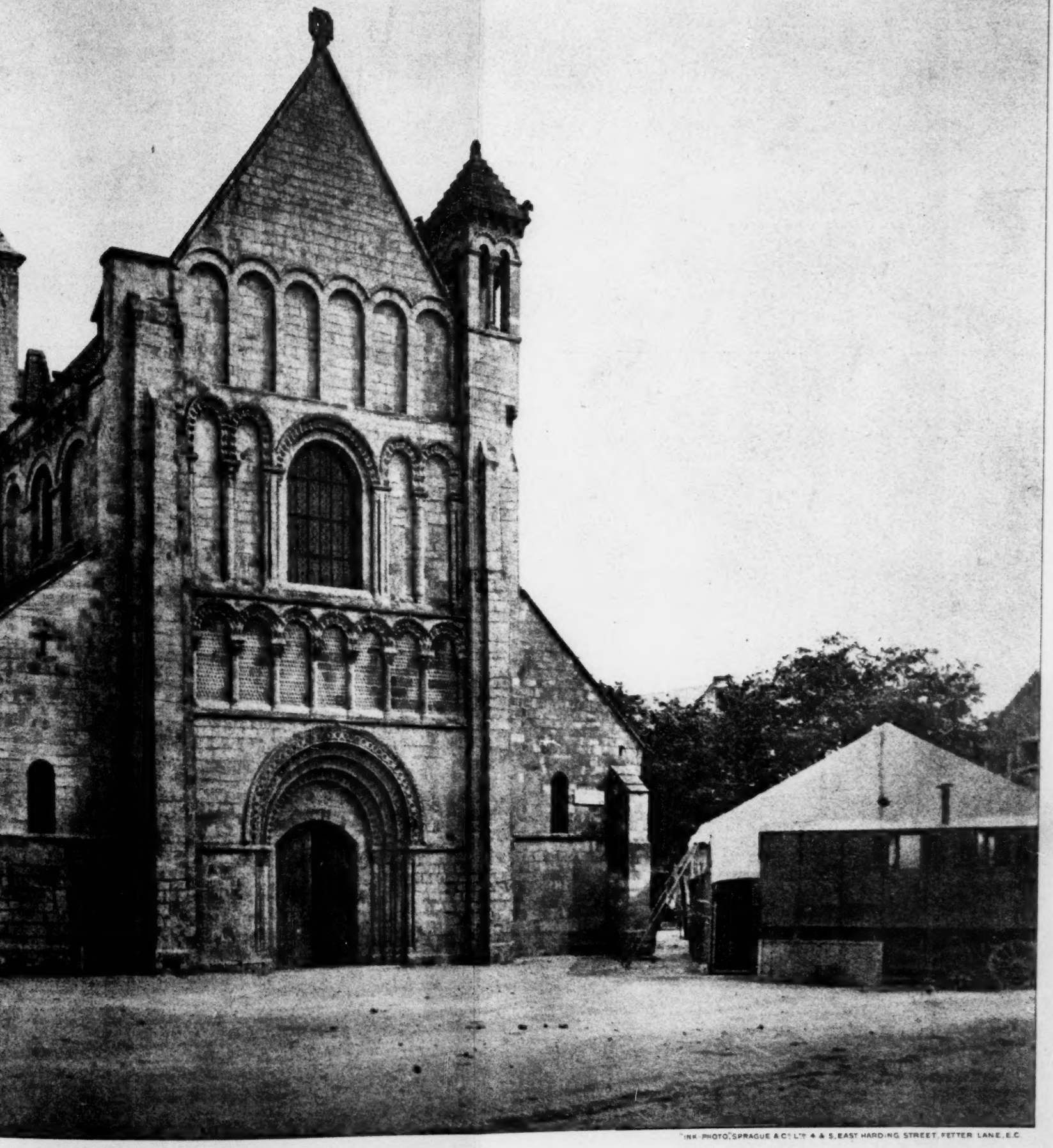




OUISTREHAM: V



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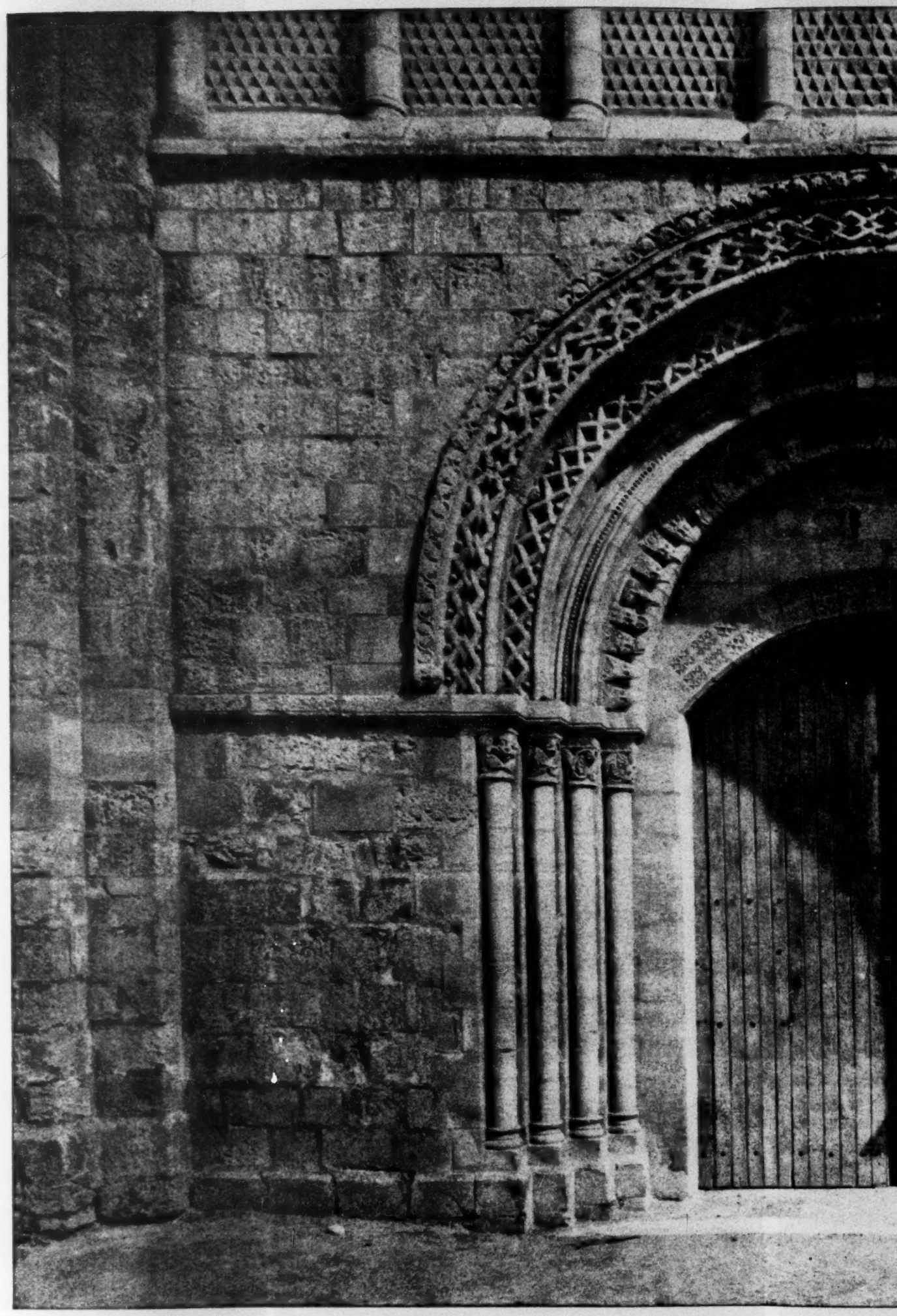
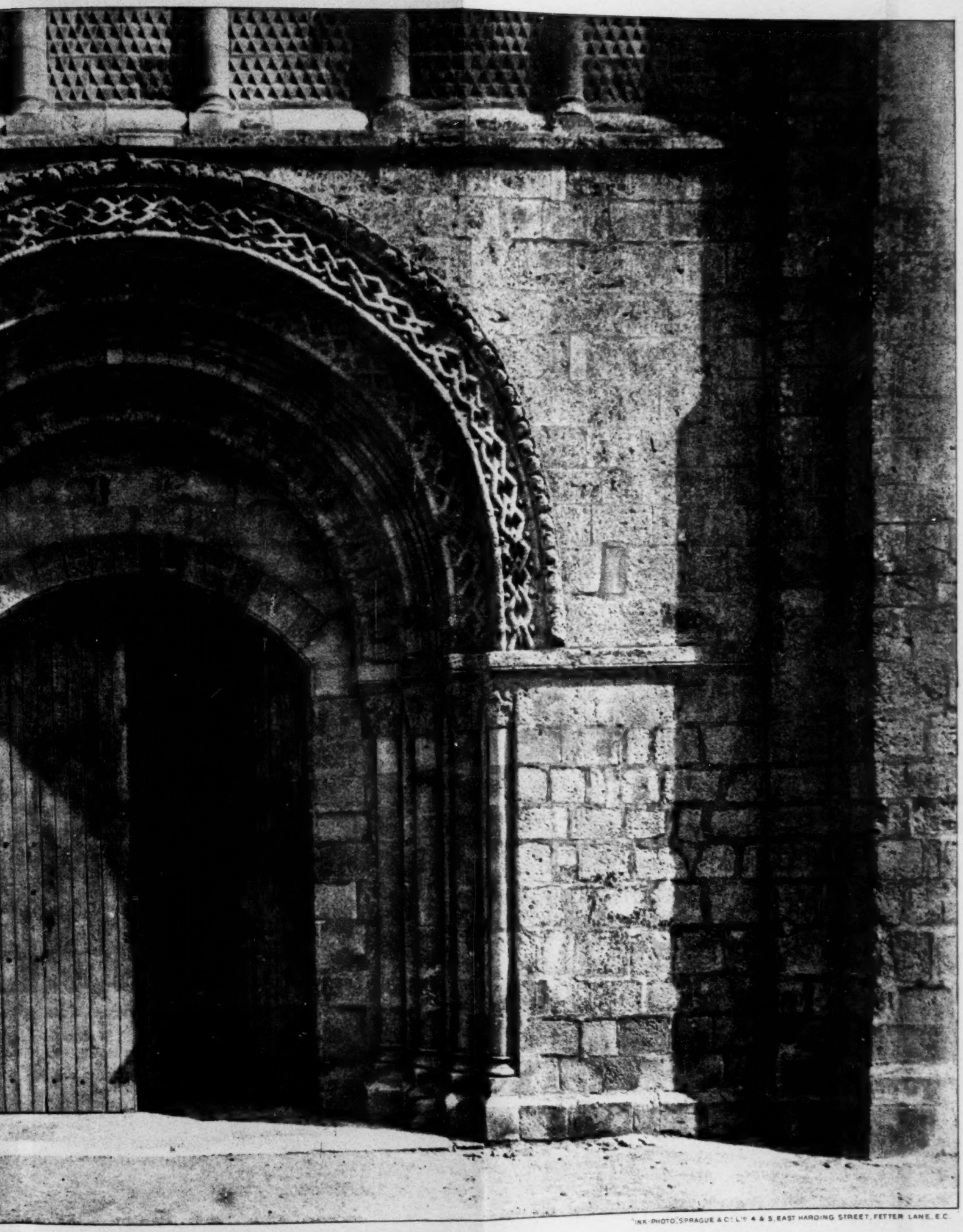
OUISTREHAM: VIEW FROM WEST END.



WEST DOORW



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WEST DOORWAY, OUISTREHAM.

PUBLIC OFFICES · HENDON.

T. H. WATSON F.R.I.B.A. ARCH.

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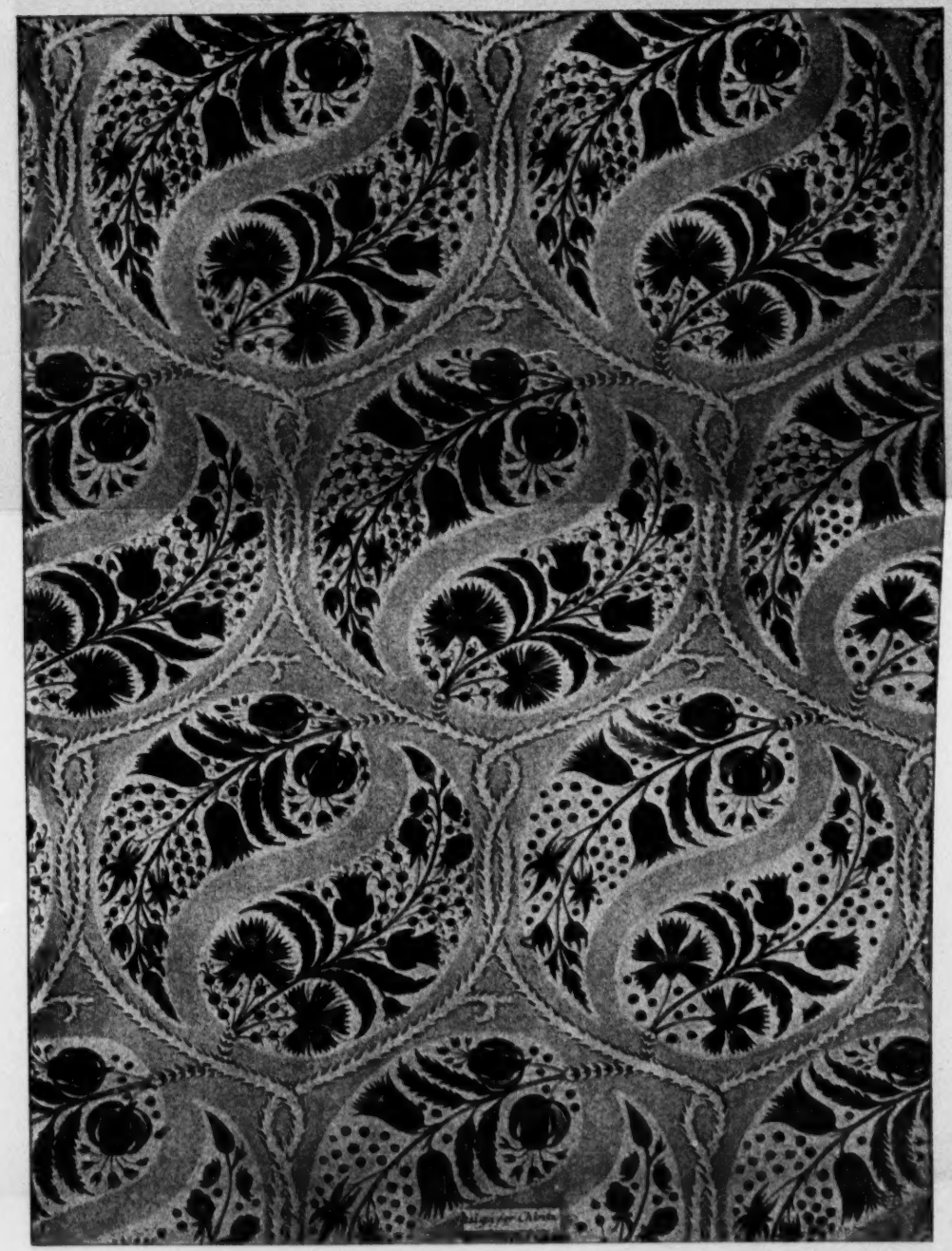

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DESIGNS FOR TEXTILES.—By Mr. A. B. McDonald (Royal College of Art).

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NEW FLOORING METHODS AT BORDON CAMP.

As a generally applicable axiom, it may be taken that novelties are seldom, if ever, exemplified in the construction of buildings and other structures designed in the drawing offices of the various Government Departments, where old-established precedents reign supreme and improvements can rarely enter until they have come into universal favour in the outside world and have acquired respectability with old age. Bearing in mind this peculiarity of official practice, we have additional pleasure in directing attention to two novel methods that are now being applied to floor construction at Bordon Camp, under the direction of Colonel Staveley Gordon, R.E., to whose courtesy we are indebted for the opportunity of obtaining the particulars given in this article.

The first of these systems is a type of concrete-steel floor construction of German origin, and which, so far as we are aware, has not been adopted elsewhere in this country. A floor on this system has just been completed by Messrs. Hawkins & Co., of Ashford, Middlesex, in one of the barrack buildings at the Camp, the dimensions of the space covered being 36 ft. long by 22 ft. wide, and it is worthy of note that, although the floor is only 5½ in. thick at the centre, no girders, joists, or intermediate supports are required. The concrete employed is mixed in the proportions of one part of Portland cement to four parts of ballast, and the reinforcement is applied to the tension area of the section in the form of steel strips measuring 1½ in. wide by ¼ in. thick, the strips having a quarter-twist at intervals, apparently with the object of obtaining a more secure bond between the concrete and the steel than would be given by using straight bars, and also for the purpose of affording ample support for the concrete along those parts of the bars which lie horizontally. To distribute this effect over the whole floor slab, the bars are twisted at different intervals so that the horizontal portions of one bar may be opposite the vertical portions of adjacent bars. The bars are embedded at a suitable distance above the lower surface of the concrete, in order that the metal may be adequately protected against fire. The resistance of the floor is increased by adding to the thickness of the concrete near the walls, and in some cases round rods are used for reinforcement in addition to the flat bars. We are not at present in a position to give the results of any tests upon the floor, but may say that the calculated safe live load is stated to be 62 lb. per sq. ft. and the dead load, including the weight of the floor itself, 150 lb. per sq. ft., with a factor of safety of 5. So far as first principles are concerned, there is nothing new about this system of flooring, the novelty being found in the particular manner in which the reinforcement is employed. If accurately proportioned, any floor of the kind would be perfectly safe, and the facility it offers for covering comparatively large spaces without projecting ribs is a feature that will, no doubt, be appreciated by architects.

Another new method which has been extensively used at Bordon Camp is the "Stonwod" flooring system. The materials of construction consist of a fine powder, produced in different colours, and a cementing liquid. As the composition of these materials is kept secret by the makers, we are only able to state the results of our recent examination, which extended to floors in course of being laid, to floors recently finished, and to others that had been in use for several months. In the first place, we may say that the material can be laid as a covering over a concrete foundation, over a brick or tiled floor, or upon any firmly-nailed wooden floor, so as to form a perfectly jointless surface, which, after solidification—a process occupying about thirty hours—can be polished and oiled like a parquet floor. In contact with wood "Stonwod" adheres so firmly that it can scarcely be separated without bringing away portions of the fibre, and it makes an equally satisfactory bond with concrete and other materials used for foundations. Some of the floors that we had the opportunity of inspecting during construction were being laid with a "Stonwod" skirting, raised to the height of about 3 in. all round the walls, to facilitate flushing operations and to prevent any risk of leakage into the brickwork at the junction of the floor with the walls. One point that should always be borne in mind is to avoid any use of the flooring until it has thoroughly hardened, and for the same reason the work of laying should not be undertaken in a building before other workmen have concluded their labours. However, the only injury done by premature use is to scratch the surface, and this can readily be made good by rubbing and repolishing. In one building at Bordon, used alternatively as a gymnasium, a concert hall, and a church, the floor has been slightly scratched by the nailed boots of the soldiers. This represents the extent of the damage caused by several months of hard wear, and is attributed by the patentees to the fact that the floor was opened for use too soon after completion. A more favourable criterion for judgment is to be found in the floor of the sergeants' mess-room, where there are no perceptible signs of wear, although a wooden fillet in the doorway has been completely worn through by constant traffic. The same room permits the observer to test the different effects of the covering when applied to a foundation of concrete or of timber, the elasticity of the latter being very pronounced, as might be expected. It is claimed for "Stonwod" that its fire-resisting qualities are of a high order, but on this point we are unable to speak from personal experience. For the purpose of giving the maximum degree of security against fire, the covering ought certainly to be laid on concrete or some equally non-combustible material. It happens, however, that innumerable timber floors are in existence which the owners are not likely to replace by others of fire-resisting character. In such cases, "Stonwod" offers a ready and inexpensive means of securing protection from fire on the upper surface of the floor. It is warm to the feet, and very much resembles linoleum in appearance, as in its comparative noiselessness. We are certainly inclined to believe that a very considerable future exists for this material in connexion with the design and construction of public institutions of all kinds, as well as of factories, offices, buildings, and private dwellings, more especially as in many cases it will render the use of linoleum and kindred floor coverings quite unnecessary.

NOTES ON PERMANENT WAY FOR TRAMWAYS.

Under this title, Mr. A. N. Connett, M.Inst.C.E., read a paper on Thursday last week before the Tramways and Light Railways Association. The subject is engaging much attention at the present time, and, considering the large sums of money that are being expended all over the country in the installation and extension of municipal and other tramways, it is very desirable that full publicity should be given to the results of experience and observation. Taking up "rails" as the first item for discussion, the author found very little to say, alleging the very satisfactory reason that "one result of the Report of the Standardising Committee on tramway rails has been to cut out an immense amount of 'copy' in papers such as this." Consequently, he was able to devote ample time to the discussion of "joints," a detail of permanent way construction on which much thought has been expended, and, so far, without the absolute demonstration of an entirely satisfactory solution of the problem involved. It is certainly a most unfortunate circumstance that the life of rails is practically limited by the wear at the joints, and all true economists must feel grieved to know that miles of tramway rails have to be taken out and replaced every year simply because the metals are battered at the ends, although otherwise they have many years of wear in them. One serious difficulty experienced by the tramway engineer is, as stated by the author, "that the tram-joint is inaccessible for inspection and repairs." We have no doubt that if joints on tramways were situated so that they might have the same attention as on steam railways, the joint problem would be greatly simplified. Many varieties of mechanical joint have been tried, and of them the experienced engineer was said to believe that all "are bad, only some are worse than others." No doubt, this saying is an exaggeration, but the difficulties attending the employment of mechanical joints of all kinds have caused a good deal of attention to be paid to other methods. Among such, Mr. Connett dealt with cast weld, electric weld, and thermit weld joints. The first of these is satisfactory if made in the most careful manner by experienced men. Its disadvantages were said by the author to be that the process of welding by using a large mass of molten metal changed the character of the steel rail ends, and that there was, in consequence, wear at the joints due to softer steel there than elsewhere. But the most serious objection is to be found in the large plant required, for, as the author remarked, "The transportation and use of a miniature blast furnace along a public road is a thing one would avoid if possible." The electric weld joint, at first a failure, was described as being in successful use although requiring a somewhat formidable plant. Of the thermit weld joint, which has previously been described in our columns, the author expressed a generally favourable opinion. We know that the results obtained at Leeds are satisfactory, and if they continue to be so in the future, this form of joint may become almost universal. In dealing with the question of "construction," Mr. Connett called attention to an interesting variation from the usual type of concrete construction. This system, adopted by Mr. A. E. White, M.Inst.C.E., city engineer of Hull, consists of a concrete foundation, between which and the rail is a creosoted Baltic redwood sleeper, 4 in. deep by 7 in. wide, the object of the timber being to provide some elasticity to the rail and, consequently, a more noiseless and more easy-running track. The paper concluded with some brief remarks upon paving, a subject on which very little need be said, as local conditions usually govern the adoption of the system that must be adopted.

BY-LAWS UNDER SECTION 39 (1) OF THE PUBLIC HEALTH (LONDON) ACT, 1891.

The Public Health Committee of the London County Council reported as follows at Tuesday's meeting of the Council, the recommendations being agreed to:—

On July 26, 1904, we reported further as to the necessity for an amendment of By-law No. 26, made by the Council under section 39 (1) of the Public Health (London) Act, 1891, and the Council, on our recommendation, gave instructions that copies of the by-laws proposed to give effect to the desired amendment should be again sent to the sanitary authorities pursuant to section 114 of the Act. This action was accordingly taken, and we have considered the further observations made by these authorities, but do not think it necessary to make any alterations in the amended draft. We recommend—(*a*) That by-laws be made by the Council under section 39 (1) of the Public Health (London) Act, 1891, in the form set out in the appendix to this report, and that the seal of the Council be affixed to copies of such by-laws. (*b*) That notice be advertised of the Council's intention to apply to the Local Government Board for confirmation of the by-laws, and that the other action prescribed by sections 184 and 185 of the Public Health Act, 1875, be taken.

By-laws made by the London County Council under section 39 (1) of the Public Health (London) Act, 1891, with respect to water-closets, earth-closets, privies, and receptacles for dung.

1.—The occupier of any premises shall cause every water-closet belonging to such premises to be thoroughly cleansed from time to time as often as may be necessary for the purpose of keeping such water-closet in a cleanly condition.

The occupier of any premises shall once at least in every week cause every receptacle for dung belonging to such premises to be emptied and thoroughly cleansed.

Provided that where two or more lodgers in a lodging-house are entitled to the use in common of any water-closet, or receptacle for dung, the landlord shall cause such water-closet to be cleansed, or receptacle for dung to be emptied and cleansed as aforesaid.

The owner of any lodging-house shall, subject to the provision hereinafter specified, provide and maintain in connexion with such house, water-closet, earth-closet, or privy accommodation in the proportion of not less than one water-closet, earth-closet, or privy for every twelve inmates of such house.

Provided that proceedings shall not be taken against the owner of any lodging-house for an offence against the last-mentioned requirement of this by-law unless and until the owner, after service upon him of a notice in writing by the sanitary authority, requiring him within such reasonable time as is specified in the notice to comply with the by-law, has failed to comply with the by-law within the time so specified.

For the purposes of this by-law, a "lodging-house" means a house or part of a house which is let in lodgings or occupied by members of more than one family. "Landlord" in relation to a house or part of a house which is let in lodgings, or occupied by members of more than one family, means the person (whatever may be the nature or extent of his interest) by whom or on whose behalf such house or part of a house is let in lodgings or for occupation by members of more than one family, or who for the time being receives or is entitled to receive the profits arising from such letting. "Lodger," in relation to a house or part of a house which is let in lodgings or occupied by members of more

than one family, means a person to whom any room or rooms in such house or part of a house may have been let as a lodging or for his use or occupation.

Nothing in this by-law shall extend to any common lodging-house.

Penalties.

2.—Every person who shall offend against the foregoing by-law shall be liable for every such offence to a penalty of five pounds, and in the case of a continuing offence to a further penalty of forty shillings for each day after written notice of the offence from the sanitary authority.

Provided, nevertheless, that the court before whom any complaint may be made or any proceedings may be taken in respect of any such offence may, if they think fit, adjudge the payment as a penalty of any sum less than the full amount of the penalty imposed by this by-law.

Repeal of By-law.

3.—From and after the date of the confirmation of these by-laws, the by-law numbered 26 (twenty-six) in the by-laws relating to water-closets, earth-closets, privies, ash-pits, cesspools, and receptacles for dung, and the proper accessories thereof in connexion with buildings, which were made by the London County Council on the twenty-second day of June, in the year one thousand eight hundred and ninety-three, and were confirmed by the Local Government Board on the twenty-eighth day of June, in the year one thousand eight hundred and ninety-three, shall be repealed.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. J. Williams Benn, M.P., Chairman, presiding.

Loans.—On the recommendation of the Finance Committee, it was agreed to lend Bermondsey Borough Council 13,400*l.* for erection of working-class dwellings; Hammersmith Borough Council 6,690*l.* for street improvements; Hampstead Borough Council 900*l.* for office accommodation; Poplar and Stepney Sick Asylum District Managers 5,005*l.* for works at asylum; and Shoreditch Borough Council 925*l.* for pipe sewer re-construction works. Sanction was also given to Islington Borough Council to borrowing 5,950*l.* for asphalte paving works; and to Woolwich Borough Council to borrowing 330*l.* for advances under the Small Dwellings Acquisition Act, 1899.

The London Building Act.—Proposals by the General Purposes Committee and the Building Act Committee are printed on another page.

Avery-hill Mansion.—The Education Committee and the Parks Committee each submitted a report dealing with the proposal to use the mansion at Avery-hill, formerly the residence of the late Colonel North, for the purpose of a training college for teachers. The park in which the house is situated was acquired by the Council in 1902 as an open space, and the Parks Committee recommended that Parliamentary powers be sought to authorise the use of the mansion and two acres of adjacent ground as a residential training college for teachers.

Sir W. J. Collins, on behalf of the Education Committee, moved an amendment to the effect that, instead of two acres of land, four acres of land should be utilised for college purposes.

After a long debate, the amendment was carried by 72 to 44 votes, and agreed to as the substantive motion.

Selected List of Contractors.—The following recommendations of the Education Committee were agreed to:—

"That the names of the undermentioned firms be removed from the selected list of contractors to tender for works in connexion with L.C.C. schools—(i.) Messrs. Couchman, Blow, & Co., of Blackheath; (ii.) Mr. C. Humphrey, of Fulham; (iii.) Mr. F. Harmer, of Brixton; and (iv.) Mr. C. Foreman, of Plumstead.

That the name of Mr. John Peattie, of No. 18, Dorset-street, Baker-street, be added to the selected list of contractors to be invited to tender for carrying out structural alterations and repairs to school buildings to the value of 3,000*l.*"

Survey of Non-Provided Schools.—The Education Committee reported that:—

"The Council, on June 28, 1904, sanctioned expenditure not exceeding 1,794*l.* for making a survey of the 508 non-provided schools within the county, beginning with those schools which have been unfavourably reported upon by the Council's inspectors. Active steps are being taken to complete this survey and the form upon which the reports are being made by the architect (education) provides for a description of the arrangements existing in regard to (i.) lighting, (ii.) ventilation, (iii.) heating, (iv.) cloak accommodation, (v.) lavatory accommodation, (vi.) teachers' rooms, (vii.) staircase accommodation and emergency exits, (viii.) area of playground. Particulars are also given of the office accommodation and the general condition of the building as regards structural repair, etc., together with the recommendations of the architect (education), upon the various points. Up to the present time about 200 schools have been surveyed, and the architect (education) reports that his survey will be completed by February, 1905. Following this paragraph will be found detailed recommendations dealing with the undermentioned twenty-nine schools—

Battersea—St. Mary's (N.), Green-lane, Battersea.
Battersea—Christ Church (N.), Este-road, Battersea.
Battersea—The Sacred Heart (R.C.), Trott-street, Battersea.
Battersea—St. Peter's (N.), Plough-road, Clapham-junction.
Battersea—Wesleyan Model (Southlands Training College Practising School), Castle-street, Battersea.
Battersea—St. John's (N.), Usk-road, Battersea.
Battersea—St. Mark's (C.E. Infants'), Battersea-rise.
Bethnal Green, S.W.—St. Matthias (N.), Granby-street, Bethnal Green.
Brixton—St. Andrew's (N.), Lingham-street, Stockwell.
Brixton—St. Mark's (N.), Bolton-street, Kennington.
Clapham—Wandsworth-road (Commercial), St. Paul's-place, Wandsworth-road.
Deptford—St. Joseph's (R.C.), High-street, Deptford.
Greenwich—St. Peter's (N.), Bridge-street, Greenwich.
Hampstead—Emmanuel (N.), West-end, Hampstead.
Hampstead—St. Mary's (C.E.), West-end-lane, Kilburn.
Hampstead—St. Mary's (R.C.), Holly-place, Hampstead.
Hampstead—St. Paul's (P.), Winchester-road.
Lambeth, N.—Lambeth-road (Wesleyan), Lambeth.
(19.) Lambeth, N.—St. Mary's (Infants'), Lambeth-road.
Marylebone, E.—St. Edward's Convent (R.C.), Blandford-square.
Marylebone, W.—Richmond-street (R.C.), Edgware-road, St. John's Wood.
Paddington, N.—Harrow-road (R.C.), Paddington.
Paddington, N.—St. Mary's (N.), Church-place, Harrow-road, Paddington-green.
Paddington, N.—St. Mary Magdalene, Clarendon-street.
Poplar—Hale-street (Wesleyan), Poplar.
Poplar—All Saints' (N.), Bow-lane and Newby-place, Poplar.
Walworth—St. Matthew's (N.), Lion-street, New Kent-road.
Walworth—St. John's (N.), Larcom-street, Walworth-road.
Wandsworth—Immanuel (C.E.), Factory-square, Streatham-common.

Prefixed to the reports on each school are (i.) the official number of the school (Board of Education); (ii.) the late School Board division and sub-division; (iii.) the accommodation as recognised by existing managers (as far as such information is obtainable); (iv.) the accommodation as recognised by the late authority; (v.) the accommodation as recognised by the Board of Education, and (vi.) the accommodation now recommended to be recognised. In each case recommendations are submitted in reference to the character and suitability of the premises for purposes of elementary education. It should be added that, unless specially mentioned, there is a *prima facie* case that the drains are in a serviceable condition."

The report included reports from the educational architect (Mr. T. J. Bailey) on surveys he had made of the twenty-nine schools, recommending that in some cases representations should be made to the Board of Education as to the unsuitability of the schools from a structural point of view, and in other cases recommending substantial structural alterations.

Sir William Collins, the Chairman of the Education Committee, said he did not agree that this question of the state of the non-provided schools should be considered piecemeal, his contention being that these schools should be dealt with as a whole. He, therefore, declined to move the recommendation of the Committee.

The Rev. A. Jephson thereupon moved the recommendation dealing with the first school on the list, and stated that the managers of the non-provided schools were anxious to know their fate.

Mr. McKinnon Wood moved, as an amendment, that the recommendations be referred back for the Committee to complete their survey and inspection of all the non-provided schools as rapidly as possible, and to report to the Council, including as to the extra expenditure which would fall upon the rates before the close of the financial year. He said he could quite recognise that the managers were anxious to know their fate, and he could appreciate their anxiety, for they did not want this matter of the Voluntary Schools and Elementary Education to come before the people of London as one great picture.

After a discussion extending over three hours, during which it was stated that there are 508 of these schools to be reported on, the amendment was carried on a division by 72 votes to 45.

The Port of London.—The Rivers Committee presented their report, recommending that the Council should promote a Bill in the next session of Parliament, on the lines of the Bill introduced by the Government with certain modifications, for the purpose of establishing a Port Commission, which should purchase the undertakings of the three principal dock companies, take over the duties of the Thames Conservancy so far as they related to the Lower Thames, and carry out works for the improvement of the Port. The proposed Bill stipulates that the Commission shall consist of 40 members, 24 to be appointed by the Council and four by the City Corporation and Government departments, the remaining 12 to be trade and shipping representatives.

Sir T. Brooke-Hitching moved as an amendment:—"That, having regard to the evidence given before the Royal Commission to the great, if not insurmountable, difficulties connected with dredging the Thames, which dredging is involved in the scheme for the purchase of the docks and warehouses in the Port of London, it is desirable before the Council commits itself to the principle of purchase to refer back the report to the Committee, with instructions to take expert opinion on the question of the practicability of deepening the river by means of dredging, or the alternative plan of obtaining permanent deep water by means of the erection of a barrage with ship locks at Gravesend."

Mr. J. Brandon seconded the amendment.

Mr. Bruce declared that a barrage would destroy the Port of London. If they stopped the scour of the Thames, the sandbanks below Gravesend would flatten out and fill up the existing channel.

Th amendment was rejected.

An amendment moved by Mr. Harris to the effect that the representation of the Council on the Commission should be 15 and not 24 members was also rejected.

Lord Welby, on behalf of the Finance Committee, moved the addition to the recommendation of words to authorise the Commission to levy dues on goods in accordance with a schedule of *maximum* rates to be approved by the Board of Trade, provided that such power was only to be exercised by the Port Commission in the event of the revenue of the Port Fund being insufficient, after providing for working expenses and any prior charges, to meet the interest on the guaranteed Port stock and the instalments payable to the sinking fund for redemption of the stock when such became payable.

Mr. Bruce seconded the amendment, which, after some discussion, was rejected by a small majority.

The recommendations of the Committee were then adopted.

Lewisham Palace of Varieties.—The Theatres and Music-Halls Committee reported that they had considered plans submitted by Messrs. Owen & Ward, for Mr. W. Stephens, of a music-hall proposed to be erected at the junction of Lewisham High-street and Limes-grove. The building will have seating accommodation for 1,642 persons. The application was agreed to on certain conditions.

Vauxhall Bridge—Designs for Panels.—The Bridges Committee reported as follows:—

"The design approved by the Council on May 19, 1903, for the superstructure of the new Vauxhall Bridge, provides for sculptured panels over each of the piers on both the up-stream and down-stream sides. In the estimate approved on that date, a sum of 1,000*l.* was included in respect of each of the eight panels, and provision of 8,000*l.* has been made for this work in the contract for the erection of the superstructure of the bridge. We have since had under consideration the question of the design of the panels, and have had the advantage of the assistance of Mr. A. Drury, A.R.A., who has been engaged in conjunction with Mr. F. W. Pomeroy on this feature of the elevation of the bridge. The original estimate of 8,000*l.* was in respect of cast-iron panels with allegorical figures in low relief, but we are advised that, at an additional expenditure of only 1,600*l.*, it will be possible to cast the figures in bronze in entire relief. Sketch models have been submitted to us, and from them we have had an opportunity of judging the effect of different panels in entire and low relief. The effect of the former method of treatment in this instance appears to us to be so greatly superior to the latter that we have unanimously decided to adopt the proposal. Though it will involve an increase of expenditure on this item of 1,600*l.*, as above stated, a saving of a much larger sum has been effected on other parts of the decoration of the bridge, so that the ultimate cost of the bridge will not be increased. We have given directions for the sketch models to be placed in the lobby of the Council Chamber."

Application under the 1894 Building Act.—That the application of Mr. E. Crosse for an extension of the period within which the erection of a one-story cart-shed and stable, at No. 8, Bermondsey-wall, Rotherhithe, was required to be commenced, be granted.—Agreed.

Fire Protection.—The following applications of the Fire Brigade Committee were agreed to:—

"That the estimate (No. 4,250) of 4,000*l.* submitted by the Finance Committee in respect of the acquisition of three sites for additional fire-stations at Balham, Brockley, and Earlsfield (Wandsworth) be approved; and that the Fire Brigade Committee be authorised to make preliminary arrangements for the acquisition of such sites.

(*a*) That the estimate (No. 4,301) of 12,000*l.* submitted by the Finance Committee in respect of the acquisition of a site, and the erection thereon of a new fire-station in substitution for the Shooter's Hill station, be approved; and that the Fire Brigade Committee be authorised to make the necessary preliminary arrangements for the erection of the new station.

(*b*) That the solicitor do serve notices to treat for

the acquisition of the vacant site at the junction of Shrewsbury-lane and Eaglesfield-road.

That the freehold of a piece of ground at the junction of Putney Heath-lane and Kersfield-road be acquired for 1,850*l.*; that the valuer do issue a draft contract allowing, in addition to that amount, the usual surveyor's fee and 5*l.* 5*s.* for solicitor's preliminary costs; that the solicitor do complete the matter; and that the seal of the Council be affixed to any necessary documents connected with the purchase.

That the freehold of Nos. 45, 47, 49, and 51, Calverley-grove, Upper Holloway, be acquired for 1,350*l.*; that the valuer do issue a draft contract allowing, in addition to that amount, 21*l.* for a surveyor's fee and 4*l.* 4*s.* for solicitor's preliminary costs; that the solicitor do complete the matter; and that the seal of the Council be affixed to any necessary documents connected with the purchase."

Tramways.—The Highways Committee recommended, and it was agreed:—

"(*a*) That the operation of standing order No. 363 relating to the time for the submission to the Council of schemes involving application to Parliament be suspended, in order that the following recommendation may be considered—

(*b*) That Parliamentary powers be sought, in the Session of 1905, to enable the Council to construct tramways from the boundary of the county of London in Church-road, Upper Norwood, *viâ* Church-road and Crystal Palace-parade, to a point nearly opposite the high-level entrance to the Crystal Palace."

Housing.—The Housing of the Working Classes Committee reported as follows, the recommendation being agreed to:—

"We report that, in pursuance of the authority given by the Council on July 14, 1903, working drawings have been prepared of the buildings proposed to be erected for the accommodation of persons of the working class on the site of the Royal Caledonian Asylum in Caledonian-road, Islington. The site, which will in future be known as the Caledonian estate, was acquired by the Council under Part III. of the Housing of the Working Classes Act, 1890, and has an area of about 2 acres, with a frontage of 248 ft. to the east side of Caledonian-road, immediately north of Pentonville Prison. It is intended to provide on the estate five blocks of five-story block dwellings, capable of accommodating 1,388 persons in six tenements of one room, 110 tenements of two rooms, 144 tenements of three rooms, four tenements of four rooms, and four tenements of five rooms. The Works Committee have informed us that they are not prepared to undertake the erection of the buildings at the amount of the estimate, and we are of opinion, therefore, that tenders for the work should be invited from a selected number of firms. It is not desirable that the estimate of the cost should be published at the present time, and, as no liability will be incurred in the meantime, we do not propose to submit an estimate until after the acceptance of the tenders. We recommend—That the working drawings of the dwellings proposed to be erected on the Caledonian estate, Holloway, Islington, be approved; and that the Housing of the Working Classes Committee be authorised to invite tenders from a number of selected firms for the erection of the buildings."

The Gladstone Memorial.—The Improvements Committee submitted a report with reference to the allocation of a site for the proposed Gladstone Memorial. They recommended that the Memorial Committee be offered a site to the west of St. Clement Danes Church in the Strand. The First Commissioner of Works has consented to the erection of the monument on this site. The monument will be appropriate and important in character, and will, in the opinion of the Memorial Committee, be in every way worthy of the surroundings. It is designed by Mr. Hamo Thornycroft, R.A., and has a cruciform base measuring about 26 ft. every way, with a pavement around it about 5 ft. wide. The superficial area of the ground required for the structure will be about 500 ft. It is proposed that the memorial shall have an architectural base of Portland stone, and shall be surmounted in the centre by a bronze statue of Mr. Gladstone in the robes of the Chancellor of the Exchequer. Seated statues or groups also in bronze will be placed on the projecting portions of the base, and the height of the memorial will be about 32 ft. The proposed site, including the surrounding footway, is distant about 82 ft. from the buildings on the south side of the Strand, about 51 ft. from the railings at the western end of St. Clement Danes Church, about 83 ft. from the north side of the Strand, and 139 ft. from the eastern end of the crescent site. This will allow a width of about 60 ft. for the carriageway to the south of the memorial, 46 ft. to the east, 63 ft. to the north, and 87 ft. to the west.

The recommendation was agreed to.

Having transacted other business, the Council adjourned after a six hours' sitting.

PATENT OFFICE.—An open competitive examination for not fewer than twenty situations as assistant examiner in the Patent Office will be held by the Civil Service Commissioners in January next. The examination will commence on the 2nd of the month, and forms of application for admission to it are now ready for issue, and may be obtained on request addressed by letter to the Secretary, Civil Service Commission, Burlington-gardens, London, W.

THE ARCHITECTURAL ASSOCIATION DISCUSSION SECTION.

The second meeting of the session was held at 18, Tufton-street, on the 2nd inst., when Mr. A. H. Belcher read a paper entitled "Economies of Construction in Small Houses," the paper being illustrated by an interesting collection of drawings lent by Messrs. E. Guy Dawber, John Belcher, Arnold Mitchell, Needham Wilson, Curtis Green, and other gentlemen. Mr. Belcher divided his paper under heads as follows: 1. Site; 2. Aspect; 3. Special requirements; 4. Size and number of rooms; 5. Plan; 6. Elevation; 7. Materials; 8. Sanitary arrangements and drains; 9. Decoration; 10. Cost, and 11. Builders. Taking these in the order enumerated, he laid stress upon the following points: The selection, if possible, of a fairly level site to avoid expense in foundation work. The advisability of a south or south-east aspect, careful attention to the special requirements, a matter often overlooked. As to the size and number of rooms, this depended on locality, in London the houses being often divided up into separate tenements containing three or four rooms, with either a separate water-closet, or one used in common with the other tenements, whilst in the country and suburbs of London houses contain as a rule about seven rooms, including the bath-room and water-closet. In regard to plan, Mr. Belcher said that economically the square type, with the flues taken up in one central stack was that best adapted, but this could not always be followed, as, for example, in a row of terrace houses. As to the question of elevation, one could lay down no hard and fast rule, but simplicity should be the key-note, and local material made use of as fully as possible. Mr. Belcher then proceeded to "trounce" the speculative builder, and, to illustrate his remarks, handed round some sketches made by himself of modern jerry building. "Materials," the speaker regarded as perhaps the crux of the subject, and a difficult one to deal with, but much could be effected by a judicious use of materials to hand. Decoration he took as including painting and papering; for the former any plain colour and surface except imitation wood graining—personally he gave the preference to white throughout, varnished—and for the latter either a plain coloured lining paper or common brown paper, but better still for the first six months is to distemper the walls. The most important thing with regard to sanitary arrangements was to concentrate these as much as possible, but District and County Council regulations had to be followed, and he ventured to think that some of the requirements were ridiculous, and capable of revision. As to cost, the price per foot cube in the examples shown on the screens varied from as low as 5½d. at Hidcote, to 10d. at Hollingbourne, the price depending a good deal on locality. Lastly concerning builders, this was, he thought, a much more important matter than a good many architects considered, for often the small builder was a "one-trade man," and work entrusted entirely to him often suffered adversely in the trades other than his own speciality; he therefore suggested the employment of a builder of known capability at a slightly higher cost rather than the type alluded to.

Mr. Arnold Mitchell, in opening the discussion, alluded to the great trouble in preparing such a paper as they had had the pleasure of listening to, and expressed the thanks of those present to Mr. Belcher. The question of small houses was, he (Mr. Mitchell) thought, the most important of any to a young architect, as it was from the carrying-out of his first small house that the majority of them hoped to build up a successful practice. He advocated the most careful attention to small matters of detail, and illustrated his remarks by some practical suggestions touching the domestic blackbeetle (often a source of great annoyance in new houses), the more important being the careful setting of the range, the elimination of wood skirting, casing to hot-water pipes, and the construction of solid floors throughout. For the sake of economy he advocated building of kitchens for 4 ft. in height with seconds salt-glazed brick, the remainder being carried out in plain brickwork with struck joints. To avoid unsightly markings where pipes passed through ceilings a good way, costing about 5d., was to have circular pieces of metal cut through which the pipe could pass, having about 2 in. of metal round to act as a shield, and to keep them in position by means of the screw-nut connexions of pipes. He could not agree with Mr. Belcher that 100 ft. super was enough for living rooms, his experience being that 120 ft. super was the least people would put up with. He did not personally believe in "the parlour," which was only used in general on Sundays, or "when the district visitor called," but if a house was to let at all satisfactorily, one must be provided. His advice to young architects was, build the rooms as low as by-laws would permit (to his mind 7 ft. 3 in. was ample and over), and not worry as to fresh air. Regarding chimneys, he advocated the central type as affording an opportunity of making this a feature of the design. He ventured to disagree with Mr. Belcher as to his remarks anent painting and graining, and mentioned some small houses of Mr. Leonard Stokes', the doors of which were first painted a bright apple green, and then combed, the effect being most pleasing, and having the advantage of not showing markings in the same way as a plain surface.

Mr. Louis Ambler differed from the previous speaker in regard to the provision of a parlour, and also as to the height of rooms, nothing under 8 ft. being, in his estimation, enough. Wash-houses built inside the house were objectionable on account of steam, and he had adopted a method, in some houses he had recently built, of building the copper outside the house, and continuing the roof down so as to cover it. He believed it gave satisfaction. He was not altogether a great believer in baths for very small houses, as the misuse of them was very common, and he knew of a case where one had been used for keeping chickens in. Anything under 14 in. for thickness of outside walls on ground was pretty well impossible on account of damp, but 9 in. was, he thought, enough for walls above, though often by-laws were prohibitive. In answer to Mr. Belcher's interrogative he had used reed-thatch and found it required renewing every two to three years. If straw were used wire netting was imperative on account of the depredations of birds. As to floors, he believed in solid floors throughout, and personally he did not see the necessity of putting in joists as, if coke breeze were used, the boarding could be nailed direct to it. He did not like the idea of kitchen walls being built in ordinary brickwork unplastered, and, added in refutation of Mr. Belcher's statement, that he found there was no difference between casement and sash windows. In concluding, he declared himself an advocate for combing as against plain painting for doors, as being more serviceable.

Mr. W. A. Forsyth, in continuing the discussion, agreed with Mr. Mitchell as to the height of rooms, and mentioned the case of a district council accepting the underside of a stable loft flooring, as the ceiling line of the room under. A good thing was to lay common linoleum immediately on top of the ceiling joists and the ordinary floor boards above it, as it completely stopped any smell and noise getting through, and it could be painted or papered to form ceiling. He suggested a thin wash of cement over the surface of brickwork to overcome Mr. Ambler's objection. As a comment upon Mr. Belcher's preference for panelled doors, as these were generally understood to come from "the Baltic," he fancied they might not be quite so much in favour just at present. Concluding, he expressed the belief that the use of earth closets should be encouraged.

Mr. W. Trant Brown, in taking up the cudgels for the speculative builder, said that curiously enough he knew one of the houses sketched by Mr. Belcher to have been designed by an architect. He thought the mistake of the speculative builder lay in putting all into the elevation, and the reason why so much artificiality was found in the work of such men was the outcome of the small tenants' desire to make his cottage look as much like a castle as money would allow.

Mr. H. Passmore said he was surprised at the expression of Mr. Mitchell's, that an architect should live to please; he thought "educate" would have been a better word. It was not much good discussing questions of height of rooms as that was a matter depending on local regulations. As a further example of the small details in thinking out a building, he wished to ask Mr. Mitchell how to prevent the presence of moths, as in a recently-furnished house they had been greatly troubled by a swarm of these insects. His experience of nailing boards direct to coke breeze was that, after a time, the boarding squeaked when

trodden upon. He personally believed in 9-in. walls, from practical experience.

Mr. J. H. Pearson, in taking up the case for the small tenant, thought, on the other hand, that he took the house not from choice but of necessity. He believed in 9-in. walls, and 4½-in. for scullery and washhouse if built in cement, and also in placing foul and exhaust gratings at the floor level.

The Chairman (Mr. H. Gregory Collins), before calling on the Special Visitor, regarded the general run of by-laws as excessive. He held the opinion that ground floor and other windows in modern work were, compared with old examples, much too large, and ventured to differ from Mr. Mitchell as to the method of building kitchen walls. He thought that the question of blackbeetles was rather like making a mountain out of a molehill.

Mr. Guy Dawber, in summing up the discussion, said he had anticipated a paper with a wider scope, but there was time enough for that at a subsequent date. The two most important matters were planning and economy in building and fitting up. In regard to the former, the simple and economical working of the house was of primary importance; loss of heat was obviated in great measure by adopting central stock and building external walls of flues with 9 in. of brickwork. Centralisation of heating and drainage matters was another most important point. Hot-water cylinders should be placed as near the kitchen range as possible, and, by adopting a system of double casing, room could be provided for airing mattresses. He held the opinion that 9-in. walls, except under special circumstances, were impossible. Mr. Dawber showed how, by using brickwork for sills and thresholds, considerable economy could be effected in actual building and subsequent upkeep; in fact, this latter was the point he most wished to emphasise, for, as he showed by quoting several other examples, by exercising ingenuity at the outset much unnecessary expense could be saved afterward for repairs and decoration. The substitution of plaster for wood linings to windows was an excellent example, and offered no difficulty in the matter of papering or painting. He believed strongly in the use of glazed brick and tilework as adding immensely to the cheerfulness and health of the occupiers, and it repaid its extra expense over plaster by the fact of never wanting painting. An excellent thing was to paint the skirting black and carry this across the bottom of doors, as was done in holland. He was in accord with Mr. Mitchell with regard to the non-casing of pipes, and suggested keeping them away at least 1½ in. from the wall by means of a clip or wood blocks; he also agreed as to the building of kitchen walls, but added that he believed in limewhitening them for sanitary reasons. In conclusion, he pointed out that by substituting plasterers' battening, plastered between, for wood boarding, a considerable saving could be effected on the roofs.

Mr. Belcher, in briefly replying, said that he did not object to combing doors, but to the system of disguising deal doors under coats of paint applied in imitation of a more expensive wood. He thought that walls of two half bricks with hollow space were quite sound from weathering and constructional points of view, and added, in answer to a query from Mr. Pearson, that 5 ft., in his opinion, was a good height for the slope of a roof to start from above bedroom or attic floor. As to heights of rooms, he said that if clients would agree to 7 ft. or 7 ft. 6 in. so much the better, but he fancied they would stand out more often for 8 ft. or 8 ft. 6 in.

The meeting then terminated with a hearty vote of thanks to Mr. Belcher and to the Special Visitor.

ENGINEERING SOCIETIES.

SOCIETY OF ENGINEERS.—At a meeting held at the United Service Institution on the 7th inst., Mr. D. B. Butler, President, in the chair, a paper was read on "Recent Developments in Crushing and Concentrating Machines," by Mr. James Thame, and of which the following is an abstract:—In this paper the author dealt, firstly, with ore crushing machines; and, secondly, with ore concentrating machines from the earliest types to the latest improved forms, selecting for notice representative machines of the various classes. The problem to be solved was to mill ores at the lowest possible cost, and at the same time to crush them to the requisite degree of fineness so that the after-process of extracting the metallic contents could also be carried out with the least expense. He then described the gravity stamp, which was the first and simplest form of crushing machine, and in Cornwall was more largely used than any other type of crushing machine. The pneumatic stamp mill consisted of a single stamp, weighing about 3 cwt., this mill being largely used in English tin mines and in the Transvaal. It had the advantage of great capacity and low first cost, but it required careful tending, and if any part broke the whole machine was thrown out—a great disadvantage as compared with the gravity stamp mill. Turning to rolls, the author observed that the Krom roll was probably the most generally used crushing machine of this type. In these rolls about 75 per cent. of the power used was employed in crushing, whilst the percentage of slimes produced was very low. The Huntington mill was the strongest competitor with stamps, and for the reduction of certain grades of gold and other ores it was a reliable machine. The Oliver mill was a combination of an impact and a grinding mill. Tube mills were next described. For many years past small machines of this type had been in use in England for re-grinding sand or tailings in tin mines, whilst an enlarged form was in use in Western Australia and South Africa for grinding partially crushed gold ore. His opinion was that tube mills bid fair to assume an important place in the future of ore crushing. Sectional or graded milling was now occupying attention, and it was not unlikely that in the near future the stamp mill would become a thing of the past. The standard system of milling of the future would probably be crushing by rock breakers and then by stamps, or by a mill to a one-eighth mesh, and then grinding to the final size in a tube mill.

ARCHITECTURAL SOCIETIES.

ULSTER SOCIETY OF ARCHITECTS.—A general meeting of this Society was held on the 31st ult. in the Society's rooms, Lombard-street. Mr. W. J. Gilliland, President, occupied the chair. Mr. W. J. Fennell proposed, and Mr. J. J. M'Donnell, J.P., seconded, that the Council of the Society be instructed to take the necessary steps to obtain, if possible, the extension of the Arbitration Act of 1889 to Ireland. The Council of the Society submitted recommendations to the meeting that some explanatory clauses in the scale of architects' charges should be added, and some slight modifications should be made thereto to suit special circumstances. After discussion, the recommendations were adopted. The subject of the Belfast Corporation handing over to the staff of the City Surveyor important architectural works was discussed, and the view was very strongly expressed that the buildings so erected would suffer in architectural merit and convenience of arrangement without any corresponding advantage to the ratepayers, as such work carried out under the superintendence of an expert architect is likely to be more economically satisfactory than when he is not employed. It was decided that a deputation should wait on the Corporation at the quarterly meeting, and bring before it the views of the Society. The President reported that he had attended the meeting of the Registration Committee of the Royal Institute of British Architects in London on October 19, and at that meeting a sub-committee had been appointed, to which he was nominated, to report to the General Committee on the whole subject of the education, compulsory examination, and statutory qualification of architects. A meeting of this sub-committee was summoned for the 7th inst. in London, and that the whole subject was being considered with the greatest care, and, judging from the energy and enthusiasm exhibited in the promotion of a Bill to obtain statutory recognition, an Act of Parliament to secure same would be passed at no very distant date.—*Irish News.*

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.—The annual general meeting of the Leeds and Yorkshire Architectural Society was held on the 3rd inst. at the Society's rooms, in Park-street, under the presidency of Mr. G. B. Bulmer. It was announced that the Society had a total membership of 155, as compared with 152 last year. During the year three honorary members had been elected in Mr. R. H. Barran, M.P., Mr. W. D. Hollis, and Mr. E. C. Wallis. The officers for the year were elected at the previous meeting. The balance-sheet showed a small balance in hand. The measured drawings and architectural sketches sent in for the students' competition were on view. The prize winners will be announced at the opening meeting and smoker, at the Queen's Hotel, on November 17, when the presidential address is to be delivered.

GLASGOW ARCHITECTURAL ASSOCIATION.—At an ordinary general meeting of the Association, held on November 2, Mr. James Duncan Boyd, heating engineer, Paisley, delivered a lecture on the "Reck" system of heating. Mr. Boyd claimed for the Reck system all the essential qualifications of a satisfactory heating apparatus. This system he defined as a circulator system of low pressure hot-water heating. Invented by Captain A. B. Reck, of Copenhagen, it was first used by him in Denmark eight years ago, and was introduced into this country two years ago. The warming is done by hot water heated in a special manner by steam generated in a boiler working at a pressure of from 2 lb. to 5 lb. The steam is applied in such a way that the circulation of the water is at least four times as great as in an ordinary hot-water system. In consequence of this increased velocity it is possible to use piping one-fourth of the usual sizes, and the apparatus may be erected without consideration of levels. Further, there is no need that the boiler should be the lowest part of the heating apparatus, and therefore sunk heating chambers are not required. The application of the circulator to hot-water heating resulted in great efficiency at less initial cost and expense in maintenance. The Reck system was now largely used throughout Europe, and Mr. Boyd described, with the help of diagrams, several installations, illustrating the different methods used to suit the circumstances of each case.

COMPETITIONS.

PUBLIC LIBRARY, BENWELL, NORTHUMBERLAND.—The following is the result of this competition:—First premiated design, Mr. Vernon Hodge, 11, Grand-parade, Teddington; second and third premiums added together and divided between Mr. C. Leslie Cox, Surveyor's Department, Town Hall, Gosport, Messrs. Davison, Cratney, Central-buildings, Wallsend-on-Tyne, and Mr. G. H. T. Robinson, 27A, Queen-street, Wolverhampton.

WIGAN UNION OFFICES.—In a competition for new offices for the Guardians of the Wigan Union, limited to architects in the Wigan Union, the design submitted by Mr. Herbert Ogden has been accepted.

COADSAESEN BUILDING CLUB.—In the competition for the best designs for a pair of semi-detached villas, to be sent in on the 12th ult., the Trustees have awarded the premium of ten guineas to Mr. Basil C. Deacon, architect, of Central-buildings, South John-street, Liverpool.

BOOKS RECEIVED.

PRIVATE HOUSE ELECTRIC LIGHTING. By Frederic H. Taylor. (Percival Marshall & Co. 1s.)

Correspondence.

LIME ON BRICKS.

SIR,—I should be very much obliged if you could tell me how I can remove lime marks from a brick building caused by mixing lime against the bricks?—G. L. CRUICKSHANK.

[*** The attached lime has no doubt been converted by atmospheric carbon dioxide into carbonate of lime, which is practically insoluble in water. If the bricks are loose, probably the best method of removing the lime would be to immerse the bricks in water to which 1 per cent. of hydrochloric acid (*i.e.*, spirit of salts) had been added, until the lime dissolved, or until it could be readily rubbed off with the fingers. The bricks should subsequently be immersed in running water for an hour to remove the acid. If the bricks have already been laid and jointed with mortar, this acid solution cannot be used, as it would have a solvent action upon both the carbonate of lime and the free lime of the mortar. Theoretically, a solution of carbonic acid would be the best solvent for carbonate of lime attached to standing brickwork, but in practice it will probably be found that the lime can only be removed by mechanical means.—ED.]

MINERAL OUTPUT FOR 1903.

THE general report and statistics (of which a brief preliminary summary was issued a few weeks ago) relating to the output and value of the minerals raised in the United Kingdom, the amount and value of the metals produced, and the exports and imports of minerals, for the year 1903, have now been published in extenso, by authority of the Home Office, for presentation to both Houses of Parliament. It appears that the total value of the minerals raised amounted to 101,808,404*l.*, a decrease of 5,296,480*l.* as compared with 1902. This decrease is to be accounted for by the fall in the average price of coal from 8s. 2·84d. per ton in 1902 to 7s. 7·93d. in 1903. The total output of coal was the highest hitherto recorded—viz., 230,334,469 tons. The output of iron ore was 13,715,645 tons, showing an increase of 289,641 tons, though the value, 3,229,937*l.*, was was less by 58,164*l.* than in 1902. The ore yielded 4,500,972 tons of iron, or about one-half of the total quantity of pig iron made in the country; 6,314,162 tons of iron ore were imported during the year, 78 per cent. of which came from Spain. As to the other metallic ores, copper, gold, lead, silver, and zinc all showed an increase on the figures of 1902 both in amount and value of the metal obtained, and in the case of tin, although the amount obtained was less, the value was greater. Subjoined is an extract of the particulars given in the report respecting certain other of the mineral products:—

Chalk.—A little chalk is raised from mines, but the total quantity is insignificant compared with the output of the open quarries. Kent is by far the most important chalk-yielding county, and many of its quarries produce more than 700,000 tons annually. Much of the chalk in Kent and Essex is employed in the manufacture of Portland cement at works on the banks of the Thames and the Medway. The total output in England in 1903 was 4,469,794 tons, value 192,527*l.*

Chert and Flint.—Chert is obtained principally from strata of carboniferous age in Derbyshire and Flintshire; both these counties supply the potteries with stones used for grinding up the materials from which china is made. Flint is mainly obtained from the open chalk pits. At Brandon, in Suffolk, there are still a few shallow mines, worked in a most primitive fashion, which, with some small workings in France, suffice to supply the gradually decreasing demand for the gun-flints exported to savage countries. Total yield of chert and flint (not including gravel, which is classified under the head of gravel and sand) in the United Kingdom in 1903, 73,181 tons, value 15,036*l.*

Clay.—Many of the workings for clay and brickearth are less than 20 ft. deep, and so escape the operation of the Quarries Act, under which returns are compulsory. It must, therefore, be understood that the figures given below do not include the output of the shallow workings. There are few counties in England which do not produce minerals employed in the manufacture of bricks, and the strata from which they are dug belong to various geological ages. Beginning with the coal measures, we have mines and quarries producing fire-clay on a very extensive scale. Permian strata are likewise largely worked, as well as various beds in the Triassic, Jurassic, and Cretaceous rocks. The tertiary beds of the South of England afford much clay for making bricks, tiles, and pottery. The china clay of Cornwall and Devon is derived from granite decomposed *in situ*. Surrey yields fuller's earth, which there occurs in the lower greensand. A like mineral is obtained in Somersetshire from beds of Jurassic age. Total output and value of clay in the United Kingdom for 1903, 16,198,021 tons, 1,767,981*l.*

Gravel and Sand.—Total yield in 1903, 2,245,757 tons, value 171,556*l.* These figures, however, must not be taken as representing the total output, as these minerals are frequently dug from shallow pits less than 20 ft. deep, which are not under the Quarries Act, and which, consequently, furnish no returns to the inspectors of mines.

Gypsum.—The principal gypsum deposits worked in the United Kingdom are those of Cumberland, Nottinghamshire, and Staffordshire, where the mineral occurs in irregular seams, and in spheroidal and lenticular masses in the Keuper division of the Trias. The gypsum of Derbyshire and Westmoreland occurs in rocks of the same age, whilst the seam worked in Sussex is considered to belong to the Purbeck beds. Total output in 1903, 219,897 tons, value 69,422*l.*

Igneous Rocks.—Under this head are grouped together various kinds of igneous rocks, such as granite, syenite, diorite, basalt, etc., principally used for making road metal and paving stones. Leicestershire, with its large quarries in Charnwood Forest, is by far the greatest producer of granite rocks. Aberdeenshire and Cornwall are both remarkable for their granite, which is employed for building and monumental purposes. Carnarvonshire contributes important supplies of diorite, quartz-porphyry, and angite-porphyry. Shropshire and Staffordshire have extensive basalt quarries at Clee Hill and Rowley Regis respectively. Warwickshire has a large output of diorite from quarries at Atherston and Nuneaton. Total output for the United Kingdom in 1903, 5,425,538 tons, value 1,308,054*l.*

Limestone (exclusive of chalk).—Limestone is very widely distributed throughout the United Kingdom; it is quarried in three-fourths of the counties in England, half the counties of Scotland, and in nearly every county of Wales and Ireland. Even without taking chalk into account, it is one of the most important minerals which is quarried in this country. Total yield in 1903, 12,222,971 tons, value 1,367,733*l.*

Ochre, Umbre, etc.—Under this heading are placed the oxides of iron and manganese used as pigments, lubricants, etc. Some of the ochre of Anglesey is obtained from a native earth dug up from shallow pits, and a considerable amount is deposited by the ferruginous water from the copper precipitation pits, when exposed to the action of the atmosphere in shallow ponds. Total obtained in 1903 in the counties of Cornwall, Derby, Devon, Gloucester, Somerset, and Anglesey, 15,150 tons, value 17,045*l.*

Sandstone.—Under this heading are included all indurated sedimentary rocks which consisted originally of particles of siliceous sand, such as ordinary sandstone, grit, quartzite, "ganister," and also some "flagstone" and "freestone." They are obtained from strata of various geological ages, from the Cambrian period upwards. The counties of Lancaster, York, Glamorgan, Dumfries, and Lanark are the chief producers. Total output in 1903, 5,409,502 tons, value 1,795,428*l.*

Slate and Slate Slabs.—North Wales furnishes most of the slate; speaking roughly, rather more than three-fourths of the Welsh slate was produced from open quarries, and nearly two-fifths from mines, that is to say true underground excavations. The two largest open workings are the Penrhyn quarry, near Bangor, and the Dinorwic quarry, near Carnarvon; the largest underground workings are those belonging to the Oakeley Slate Quarries Company, Ltd., at Festiniog, with an output of 46,351 tons. Total yield of the United Kingdom in 1903, 531,612 tons, value 1,581,477*l.* These figures do not include argillaceous slate, nor the thin slabs which are sometimes split from certain limestones and sandstones for roofing purposes, and are know locally as "slate." These fissile stones are included under the headings "limestone" and "sandstone" respectively, as given above.

WESTMINSTER CITY COUNCIL.

THE usual fortnightly meeting of this Council was held on Thursday last week at the City Hall, under the Chairmanship of Alderman Emden (the Mayor).

Expenditure of the Council.—The adjourned report of the Finance Committee dealing with the expenditure of the Council was again brought up. The report showed that the expenditure had increased by 37 per cent. over the figures for 1899-1900, and the Committee said it appeared to them to be clear that the cost of executing work by direct labour was considerably in excess of the cost under the contract system.

Mr. Everitt denied that direct labour was dearer than contract work, and said there were many works which could be done cheaper by the Council's own workmen.

Mr. Somers Cocks (Chairman of the Committee) said the Committee had no wish to enter into the controversy as to the cost of direct and contract labour. That was a matter of policy for the Council to decide. The duty of the Committee was merely to report the facts.

After considerable discussion the report was adopted.

Regency-street Dwellings.—The Housing Committee reported that the architect had returned the complete cost of the City of Westminster Dwellings, Regency-street, at 94,787*l.* 3s. 2d., which was 213*l.* less than the sum authorised by the Council. The architects had made no charge for the troublesome negotiations with the owners of properties adjoining the dwellings in relation to the party walls and ancient lights surrounding the property. The architects fees were 2,954*l.* 17s. 6d. The Committee recommended "That a letter, signed by the Mayor and countersigned by the Town Clerk, be forwarded to Messrs. Joseph & Smithem, expressing the Council's thanks and satisfaction at the manner in which they, as the architects of the dwellings, have performed their professional duties."—This was agreed to.

Chandos-street Improvement.—It was reported by the Improvements Committee that a letter had been received from the London County Council with reference to the proposed widening of Chandos-street, stating that the Improvements Committee of the London County Council was unable to advise that the widening be undertaken as a County improvement, and suggesting that the work might well be undertaken as a local improvement the City Council in the usual way.

Wardour-street Widening.—A report was brought up on the question of the widening of Wardour-street. The Council had called the attention of the London County Council to the demolition of certain properties in Wardour-street, and asked that they should undertake to widen the street as a County improvement. The County Council had replied, stating that the street was not a main thoroughfare, and that, as the City Council was already widening the thoroughfare at its southern end, they could not undertake the widening as a County Improvement.

Locomotives on Highways.—It was agreed to appoint Messrs. Tallents, Dennis, & Payne to a conference at the County Hall, Spring-gardens, on November 18, on the question of the use of heavy locomotives on thoroughfares.

Reinstatement of Trenches.—The Works Committee reported that, with reference to the question of the serious effect upon the life and condition of the pavements of the City caused by the constant opening of the streets by the various undertakers under their statutory powers, a letter was addressed to the undertakers, stating that in order to prevent subsequent sinkage and permanently to restore the pavement, as far as possible, to a satisfactory condition, the Council had decided to trim back the edges of the concrete foundation obliquely upon the solid ground on either side of the trench, in order to form a proper support and key for the new concrete, and also to bare a margin along the surface of the old undisturbed concrete on each side, for the reception of the blocks to be relaid. They recommended that it be an instruction to the City Engineer that in future all trenches in paved roads be reinstated in the manner described.—The recommendation was agreed to.

OBITUARY.

MR. HARDY.—Mr. Richard Hardy, who had practised during many years at Wheelergate, Nottingham, died on November 1. Mr. Hardy was chiefly employed as an architect and engineer by brewers and maltsters; one of the largest works he executed in that capacity is the malting he built seven years ago for Messrs. Walker & Homfray, Ltd., at Retford.

MR. B. T. BATSFORD.—We regret to announce the death, at the age of eighty-three, of Mr. B. T. Batsford, the well-known publisher of architectural works, whose name is familiar to all our professional readers. Bradley Thomas Batsford was born in Hertford in 1821, and was left an orphan at the early age of thirteen. Three years later he bound himself apprentice to Mr. Henry Bickers, the founder of the firm still existing in Leicester-square, for a period of six years. He commenced business in 1837 in a small way as a general second-hand bookseller at No. 30, High Holborn, from which he moved a few years later to No. 52, and was surrounded by at least twenty other booksellers within a radius of a quarter of a mile. For some years he continued to occupy himself with books of a general character, but his proximity to Mr. John Weale, the well-known publisher of architectural and engineering books, who died in 1861, and the large number of architects who had offices in the neighbourhood, some of whom naturally made inquiries of him for professional books, led him to turn his attention to this class of publication, which he eventually made his speciality. It may be noted that for architectural publishers, High Holborn is quite a historic spot, as, within a few doors of one another, there has existed a succession of them for something like a century and a half, the most notable being Mr. John Taylor and Mr. Weale (already mentioned) with whom Taylor was for a time in partnership. Mr. Weale's business ceased to exist some three years after his death, when his stock was dispersed under the auctioneer's hammer by order of the Sheriff, and Mr. Batsford, securing part of the stock, continued to devote himself strenuously to the collecting of books upon architecture, engineering, etc., and soon was able to boast that he had a larger stock of them than had been held by any other London

bookseller. For many years he frequently sent out catalogues which made him widely known as "the architectural bookseller," both at home and in America and the Colonies. He was joined by his eldest son, Mr. Bradley Batsford, early in the Sixties, and some ten years later by his second son, Mr. Henry, who died in 1882; Mr. Herbert, his youngest son, then entering the business. A few years before this, Mr. Batsford had commenced the publication of professional books, amongst his earliest issues being the late Professor Banister Fletcher's Text Books for Surveyors ("Quantities," etc), Mr. Talbert's "Examples of Ancient and Modern Furniture," Mr. Colling's "Examples of Mediæval Foliage," Mr. Cutler's "Grammar of Japanese Ornament," etc. This branch of the business was conducted by his eldest son, Mr. Bradley Batsford, as will be known to the many authors for whom the firm has published. Mr. Batsford continued to take an active share in the conduct of the business he had founded until some two years ago, when he relinquished it in favour of his sons, Mr. Bradley and Mr. Herbert, by whom it has since been carried on. His business career extended over a period of some sixty-seven years, and his buoyant spirit and kindliness of manner endeared him to many who came in contact with him. He was very devoted to his business, fond of his books (he shed tears when he saw the damage done to them when a fire occurred on his premises about twenty-five years ago), and proud of the cordial feeling shown him by many members of the architectural profession. He took an active interest in the Booksellers' Provident Institution, of which he was an early member, and sat on the Board of Directors for some thirty years, acting on the "Relief" and "New Members" Committees. Marrying in 1843 (the year in which he started in business) Mr. and Mrs. Batsford had the happiness of celebrating their diamond wedding nearly two years ago. He leaves, besides his widow, three daughters, and his sons mentioned above. Mr. Batsford not only had (naturally) an exceptional knowledge of architectural publications, but also a very shrewd estimate as to their relative value, as we have often had occasion to observe in conversations with him on the subject.

MR. H. R. GOUGH.—We regret to announce the death of Mr. Hugh Roumieu Gough, who died at his London residence on Sunday, at the age of sixty-one. He was the third son of the late Mr. A. D. Gough, and, after serving his articles, he studied in France, Germany, Belgium, and Holland. In 1864 he entered the service of the War Office, being subsequently Chief Draughtsman at Woolwich Arsenal. He commenced practice for himself in 1870, and his subsequent works included St. Cuthbert's Church, at Kensington; the parish Church of St. Paul, Hammersmith; the Pro-Cathedral at Brisbane; the parish churches at Catford, Killamarsh, Kippax, etc.; and the Cemetery Chapel at Colombo. Mr. Gough had also been employed in the restoration of numerous churches, schools, and houses, and was responsible for the alteration and decoration of the Army and Navy Club in Pall-mall.

BUSINESS PREMISES, DERBY.—New premises have been erected at 37, Market-place, Derby, for Mr. T. Frost. The architects were Messrs. Naylor & Sale, Derby, and the contractor was Mr. Alfred Smith, Derby.

FREE LIBRARY, BROWNHILLS, STAFFORDSHIRE.—The new branch library and public reading-room at Brownhills was opened a short time ago. The building consists of two stories, and on the ground floor are reading and magazine rooms, each of which is about 20 ft. square, opening from central hall, together with the librarian's room for the issue of books. A staircase from the hall leads to the upper floor on which is an assembly or ward room over the reading-room with a platform, and a retiring-room adjoining. The assembly-room will accommodate 120 persons. In the basement there is a heating vault with low-pressure hot-water apparatus. All the rooms are artificially treated with green woodwork, and are furnished with reading tables from designs by the architect, and have terra-cotta walls and ivory friezes, and ceilings carried out in distemper. The exterior has red brick facings and stone dressings, whilst a feature is made of the turret with oriel bay on staircase over entrance. The general contractors are Messrs. Wm. Grant & Sons, Moorland-road, Burslem; the heating has been executed by Messrs. Tagg & Co., Newcastle; and the furniture has been supplied by Mr. W. Cook, Burslem. The whole work has been carried out from the designs, and under the supervision of the architect, Mr. Reginald T. Longden, Burslem, at a total cost, including the site, of 1,250*l*.

GENERAL BUILDING NEWS.

WESLEYAN CHURCH, KEMPSTON, BEDFORD.—A new Wesleyan church and Sunday school was opened at Kempston recently. The designs for the buildings were prepared by Messrs. Gordon & Gunton, architects, of London, and the builder is Mr. S. Foster, Kempston. The buildings are built of Weldon stone, rock faced, with red tile roofs. The elevation facing Bedford-road is the gable end of the nave, flanked by octagonal turrets, battlemented at the top, with a seven-light window in the wall between the turrets. On either side two porches open from the south end of the nave. Each side wall of the nave has three windows of three lights each. There are also two transepts, each with a double gable and possessing four windows of two lights each. The inside measurement of the nave is 70 ft. by 34 ft. 6 in., and the total width between the transepts is 73 ft. (outside measurement). Each transept is 20 ft. by 17 ft. inside. The height of the nave up to the apex of the hammer beam roof is 27 ft.; from the floor to the ridge the height is 36 ft. 6 in., and the height of the side walls is 17 ft. The chapel is built to seat 424 persons. There are open pews, which are fitted at each end with umbrella brackets and dishes.

WESLEYAN CHURCH, PLUCKLEY, KENT.—The opening of the new Pluckley Wesleyan church took place recently. The building will provide seating accommodation for between 100 and 120 persons, and is built of red brick, and has been constructed so that it may be extended if necessary by the addition of a Sunday school. At present it consists of a main hall, rostrum, vestry, porch, and usual outhouses. The windows have lead lights, the ceiling is matchboarded, and a Boyle's ventilator has been fixed. The work was placed in the hands of Mr. J. Day, builder, of Ashford, and it was designed and carried out under the supervision of Mr. A. E. Lacey, architect.

WESLEYAN CHURCH, RAVENSWORTH COLLIERY.—The alterations to the Wesleyan church at Ravensworth have now been completed, and the building was reopened on the 22nd ult. The extensions consist of an addition of 16 ft. to the west end of the original structure. A vestry, 16 ft. by 12 ft., has been added to the north side, separated from the church by a movable wood partition, the whole giving an extra seating accommodation for eighty persons. A stone portico has also been built at the entrance of the church, which faces the Durham-road. The builder was Mr. J. Goblin, Birtley, and the architect Mr. T. Reay, of Low Fell.

WESLEYAN CHURCH AND SCHOOLS, HIGHGATE.—On the 26th ult. the foundation-stones were laid of the new Wesleyan chapel and schools which are being erected at the corner of Jackson's-lane and Archway-road. The church will be of red brick, with stone facings. There is to be an end gallery, nave, side aisles, transept, and chancel, and accommodation will be found for 650 worshippers. The lecture hall and schools adjoining will be of similar design, with seating accommodation for 350, and besides there will be a church parlour, infants' school, and four or five classrooms. The contractors for the work are Messrs. Dorey & Sons, the architect being Mr. W. H. Boney. The total cost, including the site, is estimated at 11,514*l*.

CHURCH, HECKMONDWIKE.—A Consistory Court was held recently in the chancel of the Heckmondwike Parish Church. Mr. W. F. L. Herne (Diocesan Registrar), and the vicar (the Rev. E. E. Jones) laid before the Chancellor the proposed extension scheme. The stonework is perishing, and it is intended ultimately to rebuild the church, but the scheme, for which a faculty was granted by the court, comprises principally the erection of a new chancel and a side chapel. Mr. C. Hodgson Fowler, architect, Durham, has designed the proposed new chancel and side chapel at the parish church, and tenders for the work will shortly be invited. The side galleries will be removed altogether, but at the west end the present accommodation will not be abolished. The roof will be made water-tight. There is now accommodation for 440 persons, which will be increased by about forty-five sittings. It is estimated that the extension will cost 2,700*l*.

WESLEYAN CHURCH AND SCHOOL, HORDEN.—The foundation-stones were laid on the 5th inst. of a new Wesleyan church, with schools adjoining, which is being erected in Thorpe-street, Horden, near Castle Eden. The contract for the buildings has been let to Mr. Henry Bell, of Ryhope, and Mr. Joseph Armstrong is acting as clerk of works under the supervision of Mr. J. Walton Taylor, architect, Newcastle, who designed the premises.

WESLEYAN CHAPEL, MILLBRIDGE, YORKSHIRE.—A new Wesleyan chapel has just been opened at Millbridge, at the junction of the Halifax and Leeds roads. An octagonal tower rises to a height of 70 ft. at the south-east corner of the structure. The octagonal chancel contains choir stalls, in which two sets of singers will face each other. A communion table has been fixed at the extreme end. There is seating accommodation for 380 persons. The floor is divided into centre and side aisles, and a gallery has been erected over the porch. The pews, which are all open, are of pitch-pine, and a wood block floor has been laid. In the chancel dark oak has been used, and the pulpit is also of oak. Two vestries, one for the minister and the other for the choir, have been provided. Messrs. Thomas Howdell & Sons, of Leeds, are the architects, and the following the contractors:—Mason, Mr. Allatt, Heckmondwike; joiners, Messrs. Lazenby Brothers, Leeds; slater, Mr. Amos Thompson, Liversedge; plumber, Mr. Arthur Jackson, Liversedge; plasterer, Mr. Greenwood, Heckmondwike; painter, Mr. Ned Ramsden, Dewsbury; wood block floor, Mr. T. K. Yates, Leeds; heating engineer, Mr. George Tankard, Leeds; and ironwork, Messrs. B. Tordoff & Sons, Roberttown.

WESLEYAN CHAPEL, BOWES, YORKSHIRE.—On the 21st ult. new Wesleyan Methodist Sunday schools were opened at Bowes, near Barnard Castle. Mr. Robert Wilson, Barnard Castle, was the architect, and the contractors were:—Masonry, Mr. Walker, Gilmonby; joinery, Messrs. Borrowdale & Sons, Barnard Castle; plumbing work and painting, Mr. C. Raine; heating apparatus, Mr. Sykes, Darlington. Considerable improvements have also been made to the chapel. The seats have been taken out and replaced on a sloping floor, and the choir stalls have been substituted for the old singing pew. The front wall has been rebuilt, and fitted with Gothic windows to harmonise with those of the school.

INDUSTRIAL SCHOOL FOR GIRLS, GILMERTON, EDINBURGH.—A new school for girls at Gilmerton, the latest addition to Dr. Guthrie's Edinburgh Original Ragged Industrial Schools, was opened on the 22nd ult. The structure forms three sides of a quadrangle, and is two stories in height. The entrance front, which is 110 ft. 6 in. long, faces the road, and is recessed in the centre on the upper floor. Accommodation is provided for eighty girls. On the ground floor are an entrance hall leading into a wide corridor, extending nearly the whole length of the frontage, waiting-room, matron's room, officials' dining-room, girls' dining-hall, sick-room, with duty-room, and other adjuncts and in the centre overlooking the quadrangle an apartment containing wardrobes for each girl. On the south side of the quadrangle are arranged the classrooms and the gymnasium, and on the north side the kitchen and offices, store-rooms, etc., and the laundry block. The upper floor contains the officials' bedrooms and girls' dormitories, and the bathrooms and lavatories are centrally placed between the dormitories. Two staircases give access to the upper floor, and fire escape stairs are provided from the dormitories to the ground. All the external walls are constructed of hollow brickwork, with redstone dressing and harled, tinted a greyish-white. The roofs are covered with red tiles. The architects were Messrs. M'Arthy & Watson, Edinburgh.

SCHOOL, ABERDEEN.—The new school to be erected by the Aberdeen School Board on a site on the estate of Sunnybank will face a new road, which the Town Council are constructing. The frontage of the site is 333 ft., and the school building will have a frontage of 153 ft., and will be a three-story structure. Mr. J. A. O. Allan is the Board's architect. The plans provide for the accommodation of 1,169 pupils. On the ground floor is the infant department, consisting of five classrooms, with total accommodation for 337 pupils, a cloak-room, a hall and gymnasium, 49 ft. by 31 ft., and the usual rooms for the staff. On the same floor and at the end of the building, near the boys' playground, is situated the boys' entrance and the headmaster's room. On the first floor there are six classrooms, providing accommodation for 364 pupils, with cloak-rooms and teachers' rooms, and also a hall and gymnasium for the junior and senior pupils. This hall is the same size as that situated on the ground floor. On the top floor there are eight classrooms, with accommodation for 468 pupils, two of these rooms being provided for supplementary classes. On the top floor also are situated a cookery and laundry room, with a scullery, and a manual instruction-room with a wood store.

WESLEYAN METHODIST SUNDAY SCHOOL, NEWBURN.—The foundation-stones of the new Sunday school at Newburn, which is being erected on a site adjoining the existing Wesleyan church, took place on the 5th inst. The work is being carried out by Messrs. Brown & Bell, of Newcastle, from designs pre-

pared by Messrs. Marshall & Tweedy, also of Newcastle.

SCHOOL, HILGAY, NORFOLK.—On the 1st inst. the new church elementary schools at Hilgay were opened. The work was carried out from plans prepared by Mr. L. F. Eagleton, of Lynn, at a cost of 1,500*l.*

WESLEYAN SCHOOL, NEWBURN.—The foundation-stone has just been laid of a new Wesleyan Methodist Sunday School at Newburn. The new building, which is being erected on a site adjoining the Wesleyan church, will have a hall 76 ft. by 41 ft. At the rear of the schoolroom there are to be two vestries for class meetings. The exterior of the building will be faced with red pressed bricks, and have stone dressings to windows, doors, and buttresses; the style being late Gothic. The work is being carried out by Messrs. Brown & Bell, of Newcastle-on-Tyne, from designs prepared by Messrs. Marshall & Tweedy, also of Newcastle.

CATHOLIC SCHOOL, CARDIFF.—Bishop Hedley recently blessed and opened the Roman Catholic Secondary School for Girls at Heathfield House, Richmond-road, Cardiff. Messrs. James & Morgan were the architects, and Mr. Davies the builder.

SCHOOL, WITHINGTON, NEAR MANCHESTER.—The foundation-stone of a new public elementary school, which is to be built in Cavendish-road, Withington, was laid on the 4th inst. The new school is intended to accommodate, in the first instance, 500 children, but the plans have been so arranged that an extension, which will provide room for another 300, can be made. The exterior will be faced with red Ruabon brick, with buff terra-cotta dressings. There are to be a central hall, capable of holding 800 children, with two teachers' retiring-rooms and six classrooms on each of the two floors. The school will have a science-room. There is also to be a detached cookery and manual instruction school. The architect is Mr. Ernest Woodhouse, of Manchester.

RAILWAY MISSION HALL, OXFORD.—The Railway Mission Hall, which has been erected upon the Botley-road, was opened on the 3rd inst. The hall is 40 ft. by 30 ft., and there is a vestry, 19 ft. by 12 ft., adjoining. The architect was Mr. Herbert Quinton, and the builders were Messrs. T. H. Kingerlee & Sons.

LEICESTER-SQUARE.—No. 49, on the west side of the square, has recently been pulled down, for the rebuilding on the site, by Mr. F. C. Minter, contractor, of the out-patients' department of St. John's Hospital for Diseases of the Skin. The architects of the new hospital are, we gather, Messrs. Treadwell & Martin.

WORKHOUSE INFIRMARY, EXETER.—The foundation-stone of the infirmary, to be erected as an addition to Exeter Workhouse, was laid on the 3rd inst. The new infirmary is being erected on the separate block system, from designs by Mr. R. M. Challice. The complete design comprises five blocks—viz., an administrative block, situate in the centre, in which are located the medical officers' surgery, offices, etc., and the quarters of the nursing staff. From this department covered corridors diverge to the respective wings; block 1, for females and children, providing for sixty-six beds; block 2, the maternity portion, comprising seven beds; block 3, for males, sixty-six beds; and the consumptive block, providing for thirteen beds; making a total accommodation of 152 beds, exclusive of the nurses' quarters. The wards in each wing are of varying sizes, ranging from eighteen beds to single beds for separation purposes; each floor is provided with an administration portion, comprising duty kitchen, larder, stores, etc. Day-rooms are arranged for all the larger wards. The sanitary offices are situated in towers, having a free passage of air between them and the main buildings; they are provided with glazed brick dadoes. Iron emergency staircases are provided for at each end of the main blocks. The wards generally are to be heated by Messrs. Shorland's Manchester stoves and grates, while the corridors, bathrooms, and sanitary wings will be warmed by hot-water radiators. The first portion of the complete scheme is now being carried out by Messrs. Ham & Passmore, builders, of Exeter, at a cost (inclusive of certain alterations to the existing infirmary) of 10,500*l.*

DISPENSARY, HYSON GREEN, NOTTINGHAM.—The foundation-stone of the new Hyson Green branch dispensary has just been laid. The building is to be of brick, with external facings of sand brick and Derbyshire stone, and will have a frontage of 93 ft., and a depth of 60 ft., the total cost being estimated at about 3,000*l.* The plan provides for a dispensary and a surgeon's house, the former containing a waiting-hall, consulting-room, male and female dressing-rooms, accident and surgical room, and a dispensing-room. Storage for drugs is provided in the basement, approached by a short flight of stairs from the dispensing-room. The new dispensary, of which Mr. Ernest R. Sutton is the architect, is to be finished by the end of April. Messrs. Vickers & Son are the contractors.

HOME FOR SANE EPILEPTICS, LANGHO.—On the 25th ult. the foundation-stone was laid of the central administrative block of an epileptics' home for Manchester. The site acquired is at Langho, six miles beyond Blackburn. The architects are Messrs. Giles, Gough, & Trollope, and the contractors Messrs. R. Neill & Sons. The joint committee have acquired upwards of 160 acres of land, and are providing for 240 patients on the home system.

MINERS' INSTITUTE, CAMBOIS, BLYTH.—Viscount Ridley recently opened the new Miners' Hall and Institute which has been erected at Cambois. The building consists of a library, reading-room, billiard-room, smoke-room, and committee-room on the ground floor, the reading-room being 25 ft. by 32 ft. and the billiard-room 36 ft. by 23 ft. The bathroom is also situated on the ground floor. On the upper story there is a public hall, 56 ft. by 36 ft., capable of accommodating between 500 and 600 people, with three ante-rooms and a good platform. The electric light is fitted through a portion of the building, and the heating arrangement is on the hot-water low-pressure system. A caretaker's house adjoins the main building. The total cost is 2,400*l.*, and the structure has been built by Messrs. Cook Brothers, contractors, of Blyth, from the plans of Messrs. T. Tulip & Son, of Whinney Hill, Choppington. The electric installation is by Mr. R. Robson, of Newcastle, and the heating by Messrs. Emley & Sons.

PUBLIC LIBRARY, RAMSGATE.—The new public library which has been built at Guildford Lawn, Ramsgate, was opened a short time ago. The building has been erected from the designs of Mr. S. D. Adshead, architect, the contract having been carried out by Messrs. Denne & Sons, of Deal. The cost was 7,000*l.*

MUSEUM AND ART GALLERY, KINGSTON-ON-THAMES.—Lord Rosebery recently opened Kingston's new Museum and Art Gallery, erected on a site adjacent to that of the public library. The principal front of the building is to Fairfield West, and the main entrance is through a carved archway of Bath stone, above which is a stone niche. There is a like recess on either side in brickwork. On the north gable is a round panel of carved brickwork. The roof is covered with tiles, and is surmounted by a miniature tower. The building stands back about 30 ft. from the roadway, and is connected with the free library by an annexe. Internally the museum is 45 ft. long by 24 ft. wide. Leading from the museum, through panelled screens, is the lecture hall, 40 ft. by 27 ft., with a dome roof. The room will accommodate an audience of 200. A staircase of oak gives access to the art gallery, 45 ft. by 24 ft., which is the only room on the first floor. In addition to these main apartments, there is a committee-room, from which access is gained to a strong-room, and a retiring-room, fitted with sanitary appliances. The artificial lighting throughout is by electricity. The ventilation is provided for also by means of an electric fan in the roof. The heating is by means of the hot-water radiator system. The work has been executed by the contractor, Mr. E. Chamberlain, of Addlestone, for whom Mr. P. Maytum has acted as foreman. Mr. Alfred Cox was the architect for the library. Mr. R. Squelch was clerk of the works.

NEW PREMISES, BRISTOL.—The Cabot Café, in College-green, Bristol, has now been completed. The architects for the new buildings are Messrs. La Trobe & Weston, and the builders Messrs. R. Wilkins & Son.

EXTENSION OF THE POST OFFICE, RICHMOND.—The Richmond post office in George-street is now being enlarged and improved. The work is being carried out by Messrs. B. & E. Nightingale, of Lambeth, from plans prepared by Mr. J. Rutherford.

NEW PREMISES FOR THE LIMMER ASPHALTE PAVING COMPANY.—The Limmer Asphalte Paving Company's new premises at Blackwall (at the mouth of the Lea) have a frontage of 480 ft. to the river, with facilities for vessels unloading and loading direct alongside, and 450 ft. to the road, Orchard-place, covering an area of about 2½ acres. The Company were formerly the lessees of only a portion of the property, but purchased the freehold of the whole some few years ago. Certain of the old buildings were demolished and new factories, workshops, offices, stables, offices, and stores are now erected, also a new wharf wall and quay for landing and shipping material. The main factory, which consists of crushing mills, grinding mills, powder floors, spaces for boilers, roasters, grit stores, etc., is of two floors, each floor having an area of about 15,000 ft. super. The substratum of the site is of that difficult nature which is generally found near the river, and it was consequently necessary to carry down the concrete foundations to a considerable depth, especially next the quay. The buildings are built of stock bricks in cement. The floors are of fireproof construction and supported by steel stancheons. The steel joists used are embedded in concrete and covered with the Company's mineral rock mastic asphalte. The roofs are treated in a similar manner, being laid flat with openings in them to allow materials to be lowered in their places on the respective floors as required. The new stables and loose boxes are lined inside with salt glazed bricks. The Limmer Company's new patent paving, "Lithofalt," is used for paving the stables. A roof, 22 ft. 6 in. high, has been thrown over the yard (53 ft. by 80 ft.) between the buildings so that the vans, etc., may be loaded dry. There are carpenters', engineers', and smiths' shops, and other buildings placed in suitable positions for the proper carrying out of the works. A manager's residence and horsekeeper's cottage are also provided, and abut upon the public roadway. The Company obtain their rock from their own mines in the heart of the Bassin de Seyssel, also from Sicily, and Hanover. The raw rock is brought to the wharf in vessels which come alongside the quay, and are unloaded by means of a travelling crane which can run to any part of the wharf and pick up the material from any part of the vessels and deliver either on the roof of the buildings, into the buildings, or into trucks, which are run upon a steel overhead gantry to different parts of the works. A new patent crusher is placed in a sunk basement for the crushing of the rock asphalte, and other disintegrating and mixing machines are placed in proper sequence so that no ground is travelled over twice before the rock, reduced to a fine powder, reaches the boilers and roasters, where it is finished ready for use. The machinery in the new works is driven by electric motors of 120 h.p., and the premises throughout are lighted by electricity, the electric current being taken direct from the mains of the Poplar Borough Council, and thus with the old works the Company have the whole of their machinery duplicated. Messrs. Clarkson, of Poplar and Bloomsbury, were the architects, Messrs. Selby & Saunders, Westminster, were the quantity surveyors, and the several contractors were Messrs. F. & H. F. Higgs, of Loughborough Junction, for the buildings, Messrs. G. Munday & Sons for the river frontage, Messrs. H. J. Cash & Co. for the electric installations for both power and lighting (including motors), and the steelwork was supplied by Messrs. H. T. Shaw & Co., as sub-contractors.

DRILL HALL, LONDON.—Prince Alexander of Teck, on Saturday last, opened a new drill hall and gymnasium at Buxton-street, E. The buildings, which are of brickwork, with steel roofs, were designed and carried out by Mr. Alfred Cox, of Baker-street, W. The contractors being Messrs. F. & F. J. Wood, of Mile End.

SANITARY AND ENGINEERING NEWS.

BRADFORD SEWAGE WORKS.—During the last twelve months, by means of the thirty-two sludge filter presses at the Frizinghall works, 81,285 tons of pressed cake have been made. The small experimental apparatus for the distillation of grease direct from the sludge cake has been removed, and a plant, estimated to be capable of dealing with 18 tons of pressed cake per day, is being put down. A new Lancashire boiler, heated by means of a brick furnace, has been fixed, the fuel used being pressed sludge cake. The sludge filter works at Sandy-lane Sewage Works have been converted into filters for the purification of tank effluent water. The sewage is being purified by chemical precipitation, followed by irrigation on land. Arrangements have been made to connect the main sewer of the Greengates works with the main sewer of the Idle sewage farm. This farm now receives all the trade effluent of the Idle district. The sewage formerly reaching the Tong works has been diverted to Frizinghall by means of a connecting sewer. The new sewers within the district of Hipperholme, towards the expense of which the Corporation are contributing, have been constructed, and it is now possible to discharge the sewage of the Lower Wyke district into the Brighouse sewers. This will be done as soon as the agreement with the Brighouse Corporation is completed. The mills discharging liquid refuse into the sewers of the city have been visited from time to time, and during the year thirty-four firms have entered into agreements with the Corporation with reference to trade effluents. Of these twenty-seven have agreed to pay the Corporation for the treatment

of the effluents, and seven have erected their own plants. In consequence of the engineer's report as to the character and constantly increasing volume of the liquid refuse discharged into the sewers from the various laundries of the city, the committee determined to apply the provisions of the local Act of 1897 to refuse of this nature. A few proprietors of laundries agreed upon terms with the Corporation for the treatment of their refuse with the ordinary sewage of the city, but owing to the intervention of the North-Eastern Laundries' and Dyers' Association, the committee met with resistance in other quarters, their demand that the refuse should either be treated before discharge into the sewers or be dealt with by the Corporation on suitable terms being ignored. Consequently, the committee found it necessary to proceed against one laundry, and this would, no doubt, be treated as a test case to determine the liability of laundry proprietors. The case had been heard before the Stipendiary Magistrate, who had reserved his decision.

WATERWORKS, TARBERT, N.B.—The new Tarbert waterworks were recently opened by Lady Ileene Campbell. The works consist of two filters, each 50 ft. by 25 ft., with telescopic tube outlets for gauging the rate of filtration, and with inlets so arranged that, by lowering the water level of the one filter, it can be cleansed with filtered water from the other. At the east end of the filters a sand-washing platform, 40 ft. by 20 ft., has been laid down, with a sand-washing box of modern type. The service tank has a capacity of 180,000 gallons, and is 50 ft. square by 11 ft. 6 in. deep. The old 4-in. main to Tarbert has been supplemented by a 6-in. main, and, as the new filters have been placed at an elevation of 287 ft. above Ordnance datum, or about 100 ft. higher than the old service tank, the pressure within the supply area has been increased. The contractor for the works was Mr. Thomas Christie, Stirling, Messrs. Warren & Stuart, of Glasgow, being the engineers. The cost has been about 3,500*l.*

NEW BRIDGE, KING'S FERRY.—After operations extending over two years, the new railway bridge over the Swale at King's Ferry, which connects the Isle of Sheppey with the mainland of Kent, was completed on the 6th inst. The engineer is Sir Benjamin Baker, who has worked in conjunction with Mr. P. C. Tempest, chief engineer South-Eastern and Chatham Railway. The cost of the structure was about 50,000*l.*

FOREIGN.

FRANCE.—The architectural journal, *Le Bâtiment*, has advertised a competition in its columns for the best design for a type of "baraques" to be erected on the Paris Boulevards during the usual Christmas and New Year's fêtes.——It is proposed to considerably enlarge the range of conservatories on the Cours la Reine, Paris, by means of annexes added between the Pont des Invalides and the Pont de l'Alma.——Bartholdi's monument to the aëronauts of the Siege of Paris is to be erected at Neuilly-sur-Seine, on the axis of the Boulevard Gouvion St. Cyr.——M. Georges Ermant, architect, of Laon, has been elected President for 1904-5 of the Architectural Society of the Department of Alsace.——A hospital on a great scale is to be built at Soissons.——A new hospital is to be built at Marseilles, at an estimated cost of 600,000 francs.——It is proposed to organise next year, at the Galliera Museum, an exhibition of the work of the sculptor and ceramic artist, Emile Gallé, who died recently at Nancy.——The death is announced at Isle-sur-Sorgue (Vaucluse) of the painter, Victor Leydet. He was a pupil of Gérôme, and a member of the Société des Artistes Français. He had obtained medals at various Salons; his picture under the title "Le Vendredi Saint" attracted a good deal of notice at the Salon of 1900.

GERMANY.—Mr. C. A. Niessen, H.M. Consul at Cologne, reports that unfavourable business conditions have existed in the cement industry of Rhenish, Prussia, and Westphalia for the past three years, owing to large over production. In 1902 the prices were so low that the cement works could not make any profit. A market was then found in South Germany; but in 1903 the prices in this district likewise fell to such a point as to leave the cement manufacturers' no margin. To remedy this state of affairs, a meeting of proprietors of Rhenish-Westphalian Cement Works was summoned last month (October). After negotiations lasting two days, an agreement was arrived at for the establishment of joint sale offices, to last until the end of 1913. A union of the cement works of the Lower Elbe has also been formed, and now negotiations are pending between this syndicate and the Hanover works. Furthermore, a committee at Berlin is making efforts to unite in the first line the Upper Silesian and the Berlin factories. When an agreement is come to between Upper Silesia and Berlin on the one side, and the Lower Elbe and Hanover group on the other side, common negotiations will be entered into between these two groups.——The new Law Courts at Kreuznach are completed; the designs for the building were planned under the direction of Herr Thoemer.——The engineer, Professor Eduard Gerlich, died on October 14, in his sixty-eighth year; he was formerly Chief Inspector of the St. Gotthard Railway, and has been Professor of Engineering at the Technical Schools in Zurich since 1882.

AUSTRIA.—The "Mozart Fountain" in Mozart Platz Vienna is in course of construction; the fountain is the work of the sculptor, Theodor Wollek, and consists of a large, semicircular stone basin, from the back of which the water gushes from the mouths of fabulous creatures; the central figures are taken from the "Zauberflöte," and are cast in bronze.——The "Ferdinand" bridge at Vienna is to be rebuilt in the spring of 1906.

BRIDGE WORK IN SPAIN.—Tenders will be opened on November 29 at the "Dirección General de Obras Publicas" for the construction of (1) a bridge over the river Guadajoz, on the road from Jaén to Córdoba, at the upset price of 244,789 pesetas (about 7,120*l.*), and (2) a bridge over a branch of the river Pisuerga, on the road from Saldaña to Masa, in the province of Burgos, at the upset price of 53,377 pesetas (about 1,553*l.*).

MISCELLANEOUS.

COMPENSATION CASES.—It is stated that a sum of 265,672*l.* is claimed in respect of the freehold property appertaining to St. Clement Danes Charity Schools, and compulsorily acquired by the London County Council for their Strand to High Holborn improvement scheme.—An award to the amount of 13,870*l.* has been issued by Mr. Daniel Watney, a past President of the Surveyors' Institution, who presided over the arbitration, in settlement of a claim for 27,000*l.* preferred by the Pwllycrochan Estate Company, of Colwyn Bay, as against the London and North Western Railway Company for lands taken by them to widen their line in that locality.

IMPROVEMENTS, BELFAST.—On the 28th ult. Mr. P. C. Cowan, M.Inst.C.E., Chief Engineering Inspector to the Local Government Board, held an inquiry, at the Town Hall, into the application of the Belfast Corporation for sanction to the following loans:—15,000*l.*, for erecting an additional story to the new Municipal Technical Institute; 48,000*l.*, for the Sydenham and Knock Drainage Works; 16,000*l.*, for the Greencastle Drainage Works; and 2,000*l.*, for erecting an additional fruit market. In the course of the inquiry Mr. Samuel Stevenson, architect of the institute building, said the extra story would provide 21,700 super. ft. additional floor space. A loan of 85,000*l.* had been originally sanctioned for the institute. The contract price was 81,000*l.*, and architect's and surveyor's fees would come to about 4,050*l.* Including the new story, which would cost 14,406*l.*, the salary of clerk of works, and other necessary expenditure, the Institute would cost over 100,000*l.* Mr. H. A. Cutler, City Surveyor, gave evidence at length regarding the proposed drainage works at Sydenham and Greencastle.

CHANCEL SCREEN, ALL SAINTS' CHURCH, DRIFFIELD.—The oak chancel screen, which has been placed in this church, was dedicated on the 1st inst. The screen has been designed by Mr. Temple Moore, of London, and the work has been executed by Messrs. George Shepherdson & Sons, Ltd., Driffield. The work consists o fseven principal divisions, filling the width of the chancel arch. The four-light window in the gable of the south wall of the nave, and immediately above the screen, has been filled with painted glass from the studio of Mr. H. Victor Milner, of London.

REBUILDING IN PICCADILLY AND OLD BOND-STREET.—The site of Nos. 57, 58, 59, and 60, Piccadilly and the adjoining Nos. 44, 45, and 46, Old Bond-street, is being cleared for the erection of new premises, after the designs of Messrs. Read & MacDonald, for Messrs. Callard, Stewart, & Watt, confectioners. The former shop, Stewart's, at the corner of the two streets, was established there nearly 200 years ago, and was reputedly the oldest baker's shop in the west part of the town. In July, 1897, it was sold by auction at the Mart for 115,000*l.*—the purchasers being, it was stated at the time, the Prudential Assurance Company—the freehold building site at that corner covering 3,210 ft. super., with frontages to Piccadilly and Old Bond-street, and having extensive vaults. The six houses were then let for an aggregate rental of 2,410*l.* per annum under the leases which have recently expired together. Messrs. Howard & Co. are the general contractors for the new building; the steel construction and concrete flooring will be supplied by Messrs. Richard Moreland & Sons.

MEMORIAL, ST. ANNE'S CHURCH, ALDERNEY.—An engraved brass has been placed in the porch of the Church of St. Anne in Alderney, in memory of the late John Le Mesurier, M.A., Hon. Canon of Winchester. A memorial Celtic cross of grey granite has also been placed over the grave of the deceased divine in the graveyard of the Tateley parish church, Hants. Both memorials have been executed by Messrs. Harry Hems & Sons, of Exeter.

BATH ABBEY.—A public meeting was held at the Guildhall, Bath, on the 4th inst., under the Presidency of Lord Bath, to consider a statement which had been drawn up by Mr. T. G. Jackson, R.A., upon the condition of Bath Abbey Church. Mr. Jackson, after recalling the fact that early in August the south-east pinnacle of the central tower was struck by lightning, stated that the damage done was less than might have been expected, but the top 15 ft. of the spirelet was seriously disturbed and some of the stone shattered. There were no conductors on the building, which was obviously in danger from any storm, and it should be protected by a complete system of points and copper tapes on the plan he had submitted. The removal of the shattered part of the pinnacle had, he was sorry to say, revealed another defect. The whole of the four pinnacles, as well as those at the east end of the choir, were put together with iron clamps, which, being near the outside of the stone and exposed to damp, had rusted so seriously as to expand sometimes to twice their original thickness and had thereby disjointed the masonry to that extent. He recommended that the whole of the four spirelets of the tower and those of the east end should be reconstructed, substituting copper rods and slate dowels for the iron clamps and ties. As the pinnacles had to come down, he thought it would be well to consider whether, instead of the modern bulky pinnacles, they would not substitute pinnacles of a lighter design, something more like those of Malvern Priory and Gloucester Cathedral, which would be to return to what was the character of the original pinnacles as shown by old prints. The north-east pinnacle of the choir was, he considered, in a dangerous state, and should be seen to without delay. The finial was broken across, and the two top courses were lifted 1¼ in. on one side. The flying buttresses, to which he directed attention more than two years ago, were, he believed, put up for ornament and had no work to do until Sir Gilbert Scott vaulted the nave. The vault was now overpowering the buttresses, and the walls had an inclination outwards. He considered it imperatively necessary that the walls should be shored at certain points and the flying buttresses reconstructed without delay, or the consequences might be serious. The buttresses had all come over several inches, and it was not safe to leave any of them. Some repairs to the parapets were also needed. Two western turrets were prepared for flying buttresses to give the same architectural effect to the west front as was given by similar buttresses at the east end, and, though in neither case were they needed for strength, but only for beauty, he thought the west front would gain very greatly if these buttresses were added. It was estimated that the whole of the work recommended by the architect would involve an expenditure approximating 4,000*l.* It was resolved, on the motion of the Bishop of Bath and Wells, seconded by Mr. E. T. D. Foxcroft, to proceed at once with that part of the work which was considered urgent at a cost not exceeding 3,000*l.* The erection of the two buttresses at the west end and the question as to the alteration of the character of the pinnacles were deferred.

LIVERPOOL CATHEDRAL.—At a meeting, on the 7th inst., of the Liverpool Cathedral Committee, the Lord Bishop of the Diocese read a letter which he had received from Mr. Arthur Earle, of Childwall Lodge, Wavertree. Mr. Earle asked the Bishop "to be the medium of offering to the Cathedral Committee a sum of 25,000*l.* for the erection of the Lady Chapel, to be dedicated in due course by the Bishop, with the approval of the donors. The donors," continued Mr. Earl's letter, "are members of the Earle and Langton families. . . ." A resolution combining thanks to the donors and a decision to immediately proceed with the building of the Lady Chapel was passed unanimously. The Lady Chapel has been designed by Messrs. G. F. Bodley, R.A., and G. Gilbert Scott, the architects of the cathedral. The Committee hope to have it completed by 1909.

ARBITRATION CASE.—It is stated that Mr. W. H. Lever has been awarded 138,449*l.* as a result of the arbitration proceedings between himself and the Liverpool Corporation respecting the price to be paid by the Corporation for 1,687 acres of land belonging to Mr. Lever. In 1900 Mr. Lever acquired 2,100 acres of land in the Rivington watershed for 60,000*l.* Part of this estate he gave to Bolton, he reserved 48 acres for his own use, and for the remaining 1,687 acres he sought to obtain 457,000*l.* from the Corporation, which required the land for waterworks purposes, and had compulsory powers for acquiring the land. Ultimately, however, Mr. Lever's own valuers reduced the claim to about 250,000*l.* The Corporation only offered 40,000*l.* The umpire was Mr. R. E. Middleton, assisted by Mr. Robert Vigers, arbitrator for the Corporation, and Mr. E. Boyle, the arbitrator for Mr. Lever.

Legal.

THE WOOD-PAVING LITIGATION:
CONTRACTOR'S ACTION FOR LIBEL.

THE case of Alcott *v.* Millar's Karri and Jarrah Forests, Ltd., and Green came before the Court of Appeal, composed of the Master of the Rolls and Lords Justices Stirling and Mathew, on the 3rd and 4th insts., on the defendants' appeal against a verdict and judgment entered at the trial before Mr. Justice Grantham and a special jury in the King's Bench Division.

In this case Mr. Edward Alcott, a contractor, carrying on business in Westminster, sought to recover from the defendants damages for libel. The libel complained of was contained in a letter dated May 14, 1902, written by the defendant, W. L. Green, on behalf of the defendant Company. The letter ran as follows:—"We understand that your Council propose laying the roadway of Oxford-street with American red-gum blocks. We would very strongly recommend that before deciding this you should pay a visit of inspection to Piccadilly, Waterloo-place, Haymarket, and Whitehall, the roadways of which have been paved with American red-gum only from six to eighteen months, and are now in a rotten condition. We venture to say that the result of such a visit would certainly remove from your mind any idea of using such material for roadways in your district.—We remain, yours truly, Millar's Karri and Jarrah Forests, Ltd. Signed, Walter L. Green, for joint managing directors." The plaintiff alleged that the letter was written by the defendants in order to prevent him from getting a contract with the Marylebone Borough Council to pave Oxford-street; that, by reason of the letter, he had had to amend his contract, make a reduction in price, and allow 25 per cent. of the contract price to be retained by the Marylebone Borough Council as a guarantee of the sound and merchantable quality of his wood. The defendants pleaded that the letter was not a libel, and further, that, in so far as it contained statements of fact, they were true, and, in so far as it contained expressions of opinion, they were fair comments upon matters of public interest. They also denied that the plaintiff had suffered any special damage. The trial resulted in a verdict and judgment for the plaintiff for 250*l.* damages, and costs—hence the present appeal of the defendants.

Mr. Rufus Isaacs, K.C., and Mr. Edward Morten appeared for the appellants, and Mr. Montague Lush, K.C., and Mr. J. D. Crawford for the respondent.

Mr. Isaacs, in the course of a lengthy argument, submitted that no case of special damage had been made out in the court below, and that the learned judge had misdirected the jury upon the law as to what constituted a libel, because he seemed to have treated it as a personal libel on the character of the plaintiff, and not upon the goods he supplied.

Mr. Morten followed on the same side.

The Master of the Rolls, without calling upon counsel for the respondent, in giving judgment, said that the direction of the learned judge to the jury was quite correct, and could not be upset. The defendants had no right to say that the plaintiff's goods were rotten, and such an expression as had been used constituted a libel. He thought that the appeal should be dismissed, with costs.

The Lords Justices concurred.

PECKHAM DRAINAGE DISPUTE.

THE case of Oliver and Another *v.* the Mayor, etc., of Camberwell came before the Court of Appeal, composed of the Master of the Rolls and Lords Justices Stirling and Mathew, on the 2nd and 3rd insts., on the appeal of the plaintiffs from a judgment of a Divisional Court of King's Bench, consisting of Justices Wills and Kennedy.

Mr. Naldrett appeared for the appellants, and Mr. Danckwerts, K.C., and Mr. Courthorpe-Munroe for the respondents.

Mr. Naldrett, in opening the case, said that the Divisional Court upheld the decision of Judge Emden, sitting at the Lambeth County Court. The plaintiffs brought the action in the County Court against the defendants to recover 17*l.* 3*s.* for expenses incurred in doing certain work to abate a nuisance in premises in High-street, Peckham, in consequence of a notice, or intimation, served by the defendants' sanitary inspector. The nuisance at the time the notice was served was thought to arise from the defective state of the drains, but on opening the ground it was found that the nuisance was in connexion with the sewer, and therefore one for which the local authorities were themselves responsible. That being the case, the owners on whom the notice was served sought to recover from the local authority the expenses they had incurred in doing the work. The question in the case was whether the notice served in March, 1903, on the owners amounted to a sufficient compulsion to enable them to recover from the local authority the expenses they had incurred. Acting upon the intimation referred to, the plaintiffs did certain work of reconstruction, but no claim was made against the Council for that portion of the work which was in connexion with the sewer until the work had been completed. For such part of the work as the defendants should have done the expenses incurred by the plaintiffs amounted to the sum now sought to be recovered—viz., 17*l.* 3*s.* The County Court judge had decided the case adversely to the plaintiffs, and the Divisional Court had affirmed his decision.

After Mr. Danckwerts had argued at some length in support of the judgment in the court below, he, at the sitting of the court on the 3rd inst., stated that the parties, since the adjournment on the previous evening, had had an opportunity of consulting together, and had agreed to a stay of proceedings on certain terms which he need not mention.

Mr. Naldrett said the proposal which had been made was very satisfactory to the appellants.

The Master of the Rolls assented to the arrangement which had been come to.

PATENTS OF THE WEEK.

APPLICATIONS PUBLISHED.*

21,952 of 1903.—W. P. THOMPSON (L. M. Brillié): *Baths and Methods of Manufacturing the same.*

A method of constructing light baths, constituted by pieces of flat sheet iron or steel, bent or hollowed out and suitably cut, hinged together edge to edge, and soldered and brased invisibly in order to form a single homogeneous piece of sensibly uniform thickness.

22,802 of 1903.—J. GRANT: *Windows and Sashes therefor.*

This invention relates to windows and sashes therefor. It consists of a sliding hanging stile, rabbeted or bevelled the full length of the aforesaid stile. The sliding hanging stile has a projecting piece on both sides or on one side only made of wood or other material, and is hung over a pulley with a cord and weight on one side only. On one side of the sash the stile is rabbeted or bevelled to fit the sliding hanging stile, and hinged to the same so as to open inwards. The foregoing description applies to both the top and bottom sashes. The outside window lining and parting and staff beads have a groove for the projecting part on the sliding hanging stile to work in. The window jambs are rabbeted on the inside for bottom sash to slide against and exclude draught. The staff bead and parting bead are cut on one side of the window to allow the sashes to open inwards.

23,626 of 1903.—F. C. SMITH and F. H. DAVIS (trading together as Smith & Davis): *Manufacture of Outlet Fittings for Sinks, Baths, and Lavatory Basins.*

The manufacture of outlet fittings for a sink, bath, or lavatory basin by raising the same in a flanged cup-like form from sheet metal and then piercing the bottom of the cup so as to leave a grating or arms with a central boss for the connecting screw.

24,540 of 1903.—J. J. HEALY: *A Cramp for Pressing Flooring Boards when laid on Breeze Concrete.*

This relates to cramps for pressing flooring boards, and consists of a slotted sole plate, a travelling screw mounted on guides on said sole plate, a swivelling shoe carried on outer end of said travelling screw, a reversible ratchet and pawl operating a toothed wheel on said travelling screw, taper pins partially screwed holding said sole plate in position, nuts having projections engaging with screw part of said pin.

25,752 of 1903.—M. L. HULTON: *Lifting or Hoisting Apparatus.*

Hoisting or lifting apparatus, comprising a sprocket wheel mounted upon a shaft, carried by standards and revolved by an engine, an endless chain working over and gearing with the sprocket wheel, with hooks pivoted thereto at suitable intervals and each furnished with a right-angled arm designed to be engaged by a ring or link sliding on the chain, and a platform or landing supported by the standards.

26,684 of 1903.—C. SHOWELL: *Screw Rods for Window Frame Battens.*

A batten screw fitting, comprising a pin having a collar and a head made in one therewith, with a reduced part, and a plate with a central hole and a gap, such plate being distorted and passed upon said pin and then re-formed into its proper position.

28,613 of 1903.—T. W. TWYFORD: *Metallic Water Flushing Fittings of Stall Urinals.*

This consists in attaching flushing fittings to stall urinals and connecting them to their water supply pipes by a junction or connexion having a stem or upright branch adapted to be passed through a hole or opening in a top eave, or equivalent overhanging part of the stall, and to take both a clamping nut for securing the junction, with its attached flushing fittings, in position underneath the said eave or projecting part, and also the union nuts or like means of connecting the water supply pipe.

17,214 of 1904.—J. A. LOGAN: *Windows.*

A reversible window revolvably mounted in a fixed casing and on its exterior face provided with a pivoted weather board and a fixed overhanging guard, the board being so mounted as to automatically assume a horizontal position when the window is opened and automatically assume a vertical position when the window is closed.

13,227 of 1904.—C. A. JUHL: *Elevators or Hoists.*

An elevator or hoist, comprising in combination two upright belts with means for driving same, and one or more receptacles comprising means in connexion with said belts, whereby the receptacles are raised or lowered with the belts.

19,713 of 1904.—C. H. BOYCE: *Means for Holding Window Sashes in Position.*

Means for retaining window sashes in position, consisting of curved flat springs attached at their centre to the window sash, rollers carried by the ends of said springs and engaging against the window frame.

19,658 of 1903.—J. BUTLER: *Apparatus for the Construction of Sewers, Shafts, Passages, and the like.*

A method of forming the inverts or lower parts of sewers or channels, passages or cavities, or the bottoms of open channels, passages, or cavities in position, which consists in providing rails and a carriage to travel upon such rails and provided with an adjustable roller and placing loose or plastic concrete between these rails, and causing the roller to consolidate and distribute the concrete.

21,902 of 1903.—J. G. STIDDER: *A Method of Constructing Cavity Ventilating Concrete Blocks with Facing Tiles to Cover the same Inside or Out for House Building, and Partition Work, and the like.*

This consists in constructing walls, partitions, or the like of moulded sections united and spaced apart by dowels, or the like, engaged in keyed recesses or dovetailed grooves in the vertical faces of said sections, the dowels or the like not extending for the full depths of the blocks they join, whereby when the blocks are assembled vertical and horizontal connected spaces are provided between them which will ventilate the structure vertically and horizontally, but which may be filled with cement or other material if a solid wall is desired, the dowels being provided with tongues projecting above the upper faces of the sections they join into the space between the sections next above.

22,042 of 1903.—W. WEAVER: *Paving Blocks made from Towns' Refuse.*

This consists in the mixture of asphalte with clinker from towns' refuse for making paving blocks, in the proportions of 15 per cent. asphalte, 80 per cent. clinker, and 5 per cent. fine dust, these proportions being subject to variation to suit the strength of paving blocks required to be made.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

25,081 of 1903.—R. PRATT: *Rust Prevention Compounds.*

A compound consisting of a quickly evaporative and mobile spirit, such as petrol, gasoline, ether, petroleum, spirit, benzine, light naphtha, or like material, or any mixture of such material with a rust preventing material, such as vaseline, heavy oil, fat, wax, rosin, stearine, spermaceti, balsam, or any mixture of such material, the resulting compound retaining in a sufficient degree the mobility of the spirit.

27,617 of 1903.—H. J. HADDON (G. Malard): *Construction of Buildings for the Prevention or Spread of Fire.*

The construction of buildings for the prevention or spread of fire, comprising a system of mill, turnstile, or cylindrical drum with wings, and made of incombustible materials, said mill or the like being placed vertically or horizontally in the aperture in the wall separating two parts of a building to completely close same, but permitting the passage of workmen or goods by means of a rotatory movement around an axle or on a central pivot without danger of a current of air or flame affecting the same passage.

17,436 of 1904.—F. HENNEBIQUE: *Ferro-Concrete Piles for Quay Walls and other like Constructions.*

A system of piles of ferro-concrete (or strengthened beton) for making quay walls or other like constructions, in which a branch is cast on the pile proper, so that the part of the piles driven in at intervals and according to the inclination of the wall, forms with the intermediate sheeting piles the wall proper, whilst the branches form with the upper part of the piles a fork serving as brackets for holding suitable planking, while the branches by themselves serve as a means of attachment for one or more fender beams.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

October 27.—By J. M. WELCH (at Bishop's Stortford).

Hatfield Broad Oak, Essex.—"The Town Farm," 290 a. 2 r. 11 p. f., p.	£4,300
Five freehold cottages	155
Two tenement cottages	135
By FRANKLIN & SON (at Bishop's Stortford).	
Hatfield Broad Oak, Essex.—"Ware Pond" (or "Broad-street") Farm, 89 a. 3 r. 3 p., f., p.	1,500
Freehold house and three cottages	153
"Nine Rood Piece" and "West Hayes Wood," 11 a. 1 r. 6 p., f.	218
October 31.—By G. A. WILKINSON & SON.	
Tottenham.—High-rd., "The Markfield Estate," area 76¼ acres, comprising f.g. rents 2.240*l.* 16s., reversions varying from 76 to 97 yrs.	64,000
Hammersmith.—74, 76 and 78, King-st. (s.), area 16.300 ft., f., p.	6,500
37, 39 and 41, Mansion House-st., f., w.r. 97*l.* 10s.	1,200
Stoke Newington.—Defoe-rd., "The Stoke Newington Assembly Rooms," area 7.820 ft. u.t. 61¼ yrs., g.r. 24*l.*, p.	2,500
Streatham. — Falkbrook-road, f.g. rents 32*l.* 10s., reversion in 96 yrs.	770
By WEATHERALL & GREEN.	
Maidenhead, Berks.—Maidenhead Court Park, 26 freehold building sites (in lots)	7,115
By FULLER, HORSEY, SONS, & CASSELL.	
Shalford, Surrey.—"Unsted Mills," area 14 a. 2 r. 36 p., f. (as a going concern)	2,500
By IZARD & IZARD.	
Snaresbrook.—Chigwell-rd, "Pinsket Lands," f., y.r. 70*l.*	1,150
By PROTHEROE & MORRIS.	
Childerditch-street, Essex.—A freehold fruit farm, 8½ acres, f., p.	600
By F. VARLEY & SON.	
Muswell Hill.—Colney Hatch-la., "Claremont House," u.t. 80 yrs.; g.r. 13*l.* 13s., e.r. 75*l.*; also a freehold plot of land adjoining	1,025
Stamford Hill.—48, Plevna-rd., u.t. 69 yrs., g.r. 5*l.*, e.r. 36*l.* 8s.	180
Holloway.—425, Holloway-rd., u.t. 18 yrs., g.r. 10*l.*, e.r. 55*l.*	400
Finchley.—Torrington Pk., "Corbar," f., y.r. 75*l.*	1,450
November 1.—By DAVID BURNETT & CO.	
Wimbledon.—41 and 43, Hartfield-rd. (s.) f., p.	970
By DAVID J. CHATTELL & SONS.	
Bickley, Kent.—Magpie Hall-la., "The Barn," u.t. 93 yrs., g.r. 10*l.*, y.r. 75*l.*	1,000
Kingston-on-Thames, Surrey.—27, Canbury-pk.-rd., u.t 60¼ yrs., g.r. 6*l.* 5s., y.r. 36*l.*	165
By FLOOD & SONS.	
Maida Vale.—124, Elgin-av., u.t. 58¼ yrs., g.r. 9*l.*, y.r. 57*l.*	510
Willesden.—13, Eric-rd., u.t. 91 yrs., g.r. 6*l.*, w.r. 54*l.* 12s.	400
By HOOKER & WEBB.	
Sanderstead, Surrey.—"The Shanty," f., p.	1,700
By LOWE, GOLDSCHMIDT, & HOWLAND.	
Hampstead.—69 and 71, Belsize-rd., u.t. 50 yrs., g.r. 16*l.*, y.r. 76*l.*	650
By FULLER & RUDDOCK.	
Southall.—1, 3, 5, 25 to 45 (odd), Clifton-rd., f., w.r. 319*l.* 18s.	3,100
November 2.—By BOYTON, SONS & BUCKMASTER.	
Fulham.—353, North End-rd., u.t. 95 yrs., g.r. 25*l.*, y.r. 180*l.*	£2,780
By FURBERS'.	
Hampstead.—54 and 56, Fleet-rd., u.t. 46 yrs., g.r. 13*l.* 4s., y.r. 82*l.* 11s.	530
By JOLLY & JAMES.	
Clapton.—119, 121 and 123, Clarence-rd., f., y.r. 113*l.*	1,610
Cricketfield-rd., f.g.r. 6*l.* 10s., reversion in 73 yrs.	170
71, Mildenhall-rd., u.t. 89 yrs., g.r. 5*l.* 5s., e.r. 38*l.*	420
Forest Gate.—2, Palmerston-rd., u.t. 61 yrs., g.r. 5*l.*, y.r. 28*l.*	313
By MARK LIELL & SON.	
Bow.—22, Cardigan-rd., f., y.r. 30*l.*	400
51 and 53, Wellington-rd., u.t. 68 yrs., gr. 8*l.*, w.r. 76*l.* 8s.	490
104, Fairfoot-rd., u.t. 59 yrs., g.r. 4*l.* 10s. w.r. 39*l.*	300
Bromley.—8, 10 and 20, Box-st., f., w.r. 66*l.* 12s.	590
18, Tidey-st., f., w.r. 24*l.* 14s.	240
Leytonstone.—Holly-rd, "Clovelly," f., e.r. 50*l.*	650
By MULLETT, BOOKER, & CO.	
Bayswater.—16, Westbourne-ter., and 16, Lower Conduit-mews, u.t. 32½ yrs., g.r. 2*l.*, p.	3,350
By THURGOOD & MARTIN.	
Edgware, Middx.—"The Old George," p.-h., f., y.r. 90*l.*	3,550
By H. P. STACE (at Brackley).	
Biddlesden, Bucks.—"Hog Pit Farm," 295 a. 2 r. 8 p., f.p.	4,200
By FARRROTHER, ELLIS, & CO. (at Leeds).	
Ferry Fryston, etc., Yorks.—"Redhill Farm," 138 a. 3 r. 31 p., f. and l.	1,880
"Sheepwalk Farm," 89 a. 2 r. 4 p., f.	1,650
"Holmfield Farm," 126 a. 2 r. 14 p., f.	2,380
Various enclosures, 64 a. 1 r. 7 p., f.	908
By DEBENHAM, TEWSON, & CO., with MATTHEWS, MATTHEWS & GOODMAN (at Winchester House).	
Woolwich (Kent).—33, Green's-end (s.), f., y.r. 64*l.*	2,025
18 and 20, Thomas-st. (s.), f., y.r. 30*l.*	1,325
Thomas-st., f.g.r. 30*l.*, reversion in 8¼ yrs.	1,725
Thomas-st., the "Bricklayer's Arms," b.-h., f.g.r. 33*l.*, reversion in 60 yrs.	1,025
Thomas-st., f.g.r. 32*l.*, reversion in 58½ yrs.	870
8, Thomas-st. (s.), f., y.r. 30*l.*	875
Cross-st., f.g.r. 24*l.*, reversion in 17 yrs.	725
Cross-st., f.g.r. 20*l.*, reversion in 7¼ yrs.	800
Green's-end, the "Duchess of Wellington" p.-h., a freehold rental of 100*l.*, reversion in 41 yrs.	3,000
Green's-end, f.g.r. 41*l.*, reversion in 7¼ yrs.	2,000
Green's-end, f.g.r. 71*l.*, reversion in 19½ and 23 yrs.	2,025
1 to 13 (odd), Wilmount-st., f., w.r. 158*l.* 12s.	1,325
Taylor-st., f.r.g. 45*l.*, reversion in 50 and 41 yrs.	1,250
Helen-st., f.g. rents 72*l.* 10s., reversion in 47 and 34 yrs.	2,100
East-st., f.g.r. 24*l.* 10s., reversion in 36¼ yrs.	660
Eton-rd., the "Prince Arthur" p.h.; "Armstrong Gun" b.h., and f.g. rents 126*l.*, reversion in 34½, 26, and 20 yrs.	5,000
Armstrong-st., f.g.r. 41*l.* 15s., reversion in 21 yrs.	1,525
East-st., etc., f.g. rents 110*l.*, reversion in 82 and 33 yrs.	2,835
Armstrong-st., etc., f.g. rents 110*l.* 4s., reversions from 21 to 28 yrs.	3,715
Eton-rd., f.g. rents 131*l.* 16s., reversions from 10 to 21 yrs.	7,260
Burrage-rd., f.g. rents 46*l.* 6s., reversions from 7 to 15 yrs.	4,575
Crescent-rd., f.g. rents 118*l.* 12s., reversions from 11 to 65 yrs.	6,755
Mount-pleasant, f.g.r. 41*l.*, reversions in 36 yrs.	1,200
Whitworth-pl., f.g.r. 52*l.* 5s., reversions from 23 to 28 yrs.	1,550
Anglesea-rd., f.g. rents 120*l.*, reversions from 20 to 61 yrs.	3,840
Wilmount-st., f.g.r. 78*l.*, reversions in 34 yrs.	2,225
Anglesea-rd., f.g. rents 156*l.* 8s., reversions from 11 to 44 yrs.	4,755
New-rd., f.g. rents 240*l.*, reversions from 9½ to 36 yrs.	6,500
Wilmount-st., the "Princess of Wales" b.h., f., y.r. 40*l.*, and f.g. rents 17*l.*, reversion in 8 and 17 yrs.	2,700
New-rd., the "Anglesea Arms" p.h., f., y.r. 80*l.*	2,900
93 and 95, New-rd. (s.), f., y.r. 50*l.*	1,025
New-rd., the "Gun" p.h., f.g.r. 40*l.*, reversion in 55½ yrs.	1,075
New-rd., f.g.r. 2*l.*, reversion in 48¼ yrs.	425
Anglesea-rd., f.g.r. 28*l.* 8s., reversion in 13 and 18 yrs.	1,525
Walpole-pl., f.g.r. 26*l.* 5s., reversion in 25 and 26 yrs.	730
Brook Hill-rd., f.g. rents 32*l.* 19s., reversion in 22 and 64 yrs.	1,220
97, 100 to 108, Brook Hill-rd.; 1 and 2, Hayman's-cottages, area 21,000 ft., f., y.r. 243*l.* 15s.; also f.g.r. 8*l.* 10s., reversion in 27 yrs.	2,125
November 3.—By BALCH & BALCH.	
Hampstead-road.—8, Werrington-st., u.t. 39 yrs., g.r. 9*l.*, p.	425
Kentish Town.—5, St. Alban's-villas, u.t. 45 yrs., g.r. 2*l.*, p.	980
Holloway.—18, Dalmeny-rd., u.t. 63 yrs., g.r. 8*l.*, p.	410
Crouch End.—23, Cecile-pk., u.t. 78 yrs., g.r. 10*l.*, p.	£390
By E. HILL CLARK.	
Streatham.—245, High-rd., f., e.r. 130*l.*	1,800
By WM. CLARKSON.	
Bow.—16 to 20, Thoydon-rd., u.t. 45½ yrs., g.r. 22*l.* 10s., w.r. 179*l.* 8s.	1,115
By STIMSON & SONS.	
Sidcup (Kent).—"Westbrook" and "Acacia" Cottages, f., w.r. 31*l.* 4s.	275
Halfway-st., freehold laundry premises, y.r. 6*l.*	140
4 and 5, Alma-villas, f., y.r. 62*l.*	675
Hatherley-rd., "Fairview" and "View Cottage," f., w.r. 52*l.*	495
Hatherley-rd., "Tudor House," f., y.r. 38*l.*	255
1, 2, and 3, St. Mark's Villas, f., y.r. 83*l.* 6s.	850
1 and 2, Mayfield Villas, f., w.r. 54*l.* 12s.	460
1 and 2, Ellen Villas, f., y.r. 59*l.* 16s.	500
3, Stanley Cottages, also "Stanley House," f., w.r. 54*l.* 12s.	445
Manor-road, "Chiltern Lodge" and "Coombe Lea," u.t. 80½ yrs., g.r. 12*l.* 16s., y.r. 78*l.*	670
Bexley, Kent.—24 and 25, Salisbury-rd., u.t. 79 yrs., g.r. 4*l.* 4s., y.r. 50*l.*	465
Brockley.—Duncombe-hill, "Cardigan Lodge" and "Ingleholme," f.e. and y.r. 95*l.*	750
Dulwich.—48 to 66 (even), Ulverscroft-rd., u.t. 73¼ yrs., g.r. 42*l.* 12s., w.r. 234*l.*	1,590
51, Ulverscroft-rd., u.t. 92 yrs., g.r. 3*l.* 10s., w.r. 28*l.* 12s.	200
Kingston, Surrey.—6 and 8, Brunswick-rd., u.t. 79½ yrs, g.r. 20*l.*, y.r. 105*l.*	900
By WYER, ADAMS, & GLOVER.	
Kensington.—Warwick-rd., the "Radnor Arms" p.h., a peppercorn g.r., reversion in 16½ yrs.	2,500
Wandsworth-road.—No. 128, the "Engineers' Arms" b.h., peppercorn g.r., reversion in 4 yrs.	3,600
Belmore-st., the "Chichester Arms" b.h., peppercorn g.r., reversion in 5 yrs.	2,200
Hemans-st., the "Crown" b.h., peppercorn g.r., reversion in 4 yrs.	1,250
No. 94, "The Stag" p.h., peppercorn g.r., reversion in 4 yrs.	4,050
No. 106, the "Portland Arms" b.h., peppercorn g.r., reversion in 4 yrs.	2,650
Hemans-st., the "Garibaldi" p.h., peppercorn g.r., reversion in 4 yrs.	1,750
Brookland-rd., the "Brookland Arms" p.h., peppercorn g.r., reversion in 5 yrs.	6,000
Cavendish-gr., the "Eight Bells" b.h., peppercorn g.r., reversion in 3 yrs.	1,500
Hartington-rd., the "Train" b.h., peppercorn g.r., reversion in 3 yrs.	1,700
By ELLIOTT & SONS (at Brighton).	
Brighton, Sussex.—8 and 8a, Duke-st. (s), f., y.r. 86*l.* 12s.	1,200
17, 18 and 19, Duke-st. (engineering premises), f., y.r. 125*l.*	2,500
33, Middle-st. (s.), c., y.r. 40*l.*	525
13, 14 and 15, Queen's-pl., f., w.r. 46*l.* 16s.	420
Preston, Sussex.—173, Ditchling-rise, f., e.r. 35*l.*	500
November 4.—By RIDER & SONS.	
Notting-hill.—272, Latimer-rd. (s.), and 4, Park-st., u.t. 85 yrs. g.r. 10*l.*, y.r. 60*l.* 2s.	400
262, Lancaster-rd., u.t. 58½ yrs., g.r. 7*l.*, w.r. 59*l.* 16s.	365
By W. G. SHADRAKE.	
Leyton.—219 and 221, Vicarage-rd., u.t. 92 yrs., g.r. 11*l.*, y.r. 54*l.*	460
By WILLIS, CROUCH & LEE.	
Kensington.—4 and 6, Edith-rd., u.t. 72 yrs., g.r. 30*l.*, y.r. 150*l.*	1,170
Surbiton, Surrey.—Parklands, "Cedarlea" and "Grindon House," u.t. 74½ yrs., g.r. 27*l.* 6s., y.r. 150*l.*	1,255
King Charles'-rd, "Aubrey" and "Kenmare," u.t. 75 yrs., g.r. 14*l.*, y.r. 110*l.*	805
By WRIFORD, DIXON, & WINDER.	
Regent's-park.—York-ter., "D" Mews, u.t. 16½ yrs., g.r. 5*l.*, y.r. 150*l.*	725
Westminster.—33, Tufton-st., area 600 ft., f., w.r. 68*l.* 18s.	580
Victoria-park.—354 and 356, Old Ford-road, u.t. 49 yrs., g.r. 8*l.*, y.r. 64*l.*	645
Clapham.—White's-sq., f.g.r. 16*l.* reversion in 20 yrs.	440
Bognor, Sussex.—2 and 3, Marine-parade, f., p.	2,595
Marine-parade (rear of), a freehold pleasure garden	170
Private-rd., two sets of freehold stabling, p.	335

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

MEETINGS.

FRIDAY, NOVEMBER 11.

Architectural Association.—Mr. W. Henman on "Ventilation." 7.30 p.m.

MONDAY, NOVEMBER 14.

Surveyors' Institution.—The President, Mr. H. T. Steward, will deliver an Opening Address at 8 p.m. At the conclusion of the address the President will unveil a portrait of Mr. John Wornham Penfold, subscribed for by a large number of members, and presented in recognition of Mr. Penfold's valuable and long continued services as Honorary Secretary of the Institution.

TUESDAY, NOVEMBER 15.

Institute of Sanitary Engineers, Ltd. (Lectures in Practical Sanitary Science).—Mr. J. T. Griffin on "Sewerage" 7 p.m.

Institution of Civil Engineers.—Papers to be further discussed:—(1) "Coast Erosion," by Mr. A. E. Carey; and (2) "Erosion on the Holderness Coast of Yorkshire," by Mr. E. Romney Matthews. 8 p.m.

WEDNESDAY, NOVEMBER 16.

Architectural Association Discussion Section.—Mr. W. Curtis Green on "The South Kensington Museum for Architects." 7.30 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary Meeting of the members. 8 p.m.

Institute of Sanitary Engineers, Ltd.—Election Committee. 3 p.m. Examination and Literary Committee, Finance Committee, Organising Committee, Council Meeting at 7 o'clock.

Society of Arts.—Inaugural Address of the 151st Session of the Society, by Sir William Abney, K.C.B., D.C.L., D.Sc., F.R.S., Chairman of the Council. 8 p.m.

THURSDAY, NOVEMBER 17.

Leeds and Yorkshire Architectural Society.—Address by the President, Mr. G. Bertram Bulmer, and distribution of prizes. 6.30 p.m.

FRIDAY, NOVEMBER 18.

Junior Institution of Engineers (Westminster Palace Hotel).—Mr. William H. Lindley, of Frankfort-on-Maine, will deliver his Presidential Address, on "Municipal Engineering on the Continent." 8 p.m.

Institution of Mechanical Engineers. — Ordinary General Meeting. Mr. A. E. Seaton and Mr. A. Jude on "Impact Tests on the Wrought Steels of Commerce." 8 p.m.

TO CORRESPONDENTS.

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

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PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Hard Stocks	1 14 0	per 1000 alongside, in river.
Bough Stocks and Grizzles	1 13 0	" " "
Facing Stocks	2 12 0	" " "
Shippers	2 10 0	" " "
Flettons	1 8 0	" at railway depôt.
Red Wire Cuts	1 14 0	" " "
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing	5 0 0	" " "
Best Blue Pressed Staffordshire	4 4 0	" " "
Do. Bullnose	4 10 0	" " "
Best Stourbridge Fire Bricks	4 8 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	13 0 0	" " "
Headers	12 0 0	" " "
Quoins, Bullnose, and Flats	17 0 0	" " "
Double Stretchers	19 0 0	" " "
Double Headers	16 0 0	" " "
One Side and two Ends	19 0 0	" " "
Two Sides and one End	20 0 0	" " "
Splays, Chamferred, Squints	20 0 0	" " "
Best Dipped Salt Glazed Stretchers, and Header	12 0 0	" " "
Quoins, Bullnose, and Flats	14 0 0	" " "
Double Stretchers	15 0 0	" " "
Double Headers	14 0 0	" " "
One Side and two Ends	15 0 0	" " "
Two Sides and one End	15 0 0	" " "
Splays, Chamferred, Squints	14 0 0	" " "
Second Quality White and Dipped Salt Glazed	2 0 0	less than best.

	s. d.	
Thames and Pit Sand	7 0	per yard, delivered.
Thames Ballast	6 0	" "
Best Portland Cement	29 0	per ton, "
Best Ground Blue Lias Lime	20 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime.....12s. 0d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 6d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8¼	" "
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf	2 2½	" "

	s. d.	
Ancaster in blocks	1 11	per ft. cube, deld. rly. depôt.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks	2 4	" "
Red Corsehill "	2 5	" "
CloseburnRedFreestone	2 0	" "
Red Mansfield "	2 4	" "
YORK STONE—*Robin Hood Quality.* Scappled random blocks	2 10	" "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
HARD YORK— Scappled random blocks	3 0	per ft. cube, "
6 in. sawn two sides, landings to sizes (under 40 ft. super.)	2 8	per ft. super. "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides (slabs random sizes)	1 2	" "
3 in. self-faced random flags	0 5	" "
Hopton Wood (Hard Bed) in blocks	2 3	per ft. cube. deld. rly. depôt.
" " " 6 in. sawn both sides landings	2 7	per ft. super. deld. rly. depôt.
" " " 3 in. do.	1 2½	" "

SLATES.

in. in.	£ s. d.	
20 × 10 best blue Bangor	13 2 6	per 1000 of 1200 at r. d.
20 × 12 " "	13 17 6	" "
20 × 10 first quality "	13 0 0	" "
20 × 12 " " "	13 15 0	" "
16 × 8 " " "	7 5 0	" "
20 × 10 best blue Portmadoc	12 12 6	" "
16 × 8 " "	6 12 6	" "
20 × 10 best Eureka unfading green	15 17 6	" "
20 × 12 " "	18 7 6	" "
18 × 10 " "	13 5 0	" "
16 × 8 " "	10 5 0	" "
20 × 10 permanent green	11 12 6	" "
18 × 10 " "	9 12 6	" "
16 × 8 " "	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1000 at rly. depôt.
Hip and Valley tiles	3 7	per doz. " "
Best Brosely tiles	50 0	per 1000 " "
Do. Ornamental tiles	52 6	" " "
Hip and Valley tiles	4 0	per doz. " "
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 " "
Do. Ornamental do	60 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles	3 0	" " "
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 " "
Do. Ornamental do	54 6	" " "
Hip tiles	4 1	per doz. " "
Valley tiles	3 8	" " "
Best "Rosemary" brand plain tiles	48 0	per 1000 " "
Best Ornamental tiles	50 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles	3 8	" " "
Best "Hartshill" brand plain tiles, sand faced	50 0	per 1000 " "
Do. pressed	47 6	" " "
Do. Ornamental do	50 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles	3 6	" " "

WOOD. At per standard.

	£ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	15 10 0	16 10 0
Deals: best 3 by 4	14 10 0	15 10 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 10 0	12 10 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less thn best
Battens: seconds	0 10 0	" " "
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	9 10 0
2 in. by 4½ in. and 2 in. by 5 in.	8 10 0	9 10 0
Foreign Sawn Boards— 1 in. and 1½ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"

At per load of 50 ft.

Fir timber: best middling Danzig or Memel (average specification)	4 10 0	5 0 0
Seconds	4 5 0	4 10 0
Small timber (8 in. to 10 in.)	3 12 6	3 15 0
Small timber (6 in. to 8 in.)	3 0 0	3 10 0
Swedish balks	2 15 0	3 0 0
Pitch-pine timber (30 ft. average)	3 5 0	3 15 0

JOINERS' WOOD. At per standard.

White Sea: first yellow deals, 3 in. by 11 in	23 0 0	24 0 0
3 in. by 9 in.	21 0 0	22 10 0
Battens, 2½ in. and 3 in. by 7 in.	17 0 0	18 10 0

WOOD (*continued*).

JOINERS' WOOD (*continued*)— At per standard.

	£ s. d.	£ s. d.
White Sea: second yellow deals, 3 in. by 11 in	18 10 0	20 0 0
" " 3 in. by 9 in.	17 10 0	19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	15 10 0	16 10 0
Battens, 2½ in. and 3 in. by 7 in.	11 10 0	12 10 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	22 10 0
Do. 3 in. by 9 in.	18 0 0	19 10 0
Battens	13 10 0	15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	17 0 0
Do. 3 in. by 9 in.	14 10 0	16 0 0
Battens	11 0 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 10 0	14 0 0
Do. 3 in. by 9 in.	13 0 0	14 0 0
Battens	10 0 0	11 0 0
White Sea and Petersburg:— First white deals, 3 in. by 11 in.	14 10 0	15 10 0
" " 3 in. by 9 in.	13 10 0	14 10 0
Battens	11 0 0	12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	14 10 0
" " 3 in. by 9 in.	12 10 0	13 10 0
" " battens	9 10 0	10 10 0
Pitch-pine: deals	16 10 0	20 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow Pine—First, regular sizes	40 0 0	upwards.
Oddments	28 0 0	"
Seconds, regular sizes	30 0 0	"
Yellow Pine oddments	25 0 0	"
Kauri Pine—Planks, per ft. cube	0 3 6	0 5 0
Danzig and Stettin Oak Logs— Large, per ft. cube	0 2 6	0 3 6
Small " "	0 2 3	0 2 6
Wainscot Oak Logs, per ft. cube	0 5 0	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 8	0 0 9
¾ in. do. do.	0 0 7	—
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	0 1 0
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 6
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	17 0 0	21 0 0
American Whitewood Planks, per ft. cube	0 4 0	—

Prepared Flooring— Per square.

1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 6
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	0 16 6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 11 0	0 13 6
1 in. by 7 in. do. do.	0 14 0	0 18 0
¾ in. by 7 in. white do. do.	0 10 0	0 11 6
1 in. by 7 in. do. do. do.	0 11 6	0 13 6

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.		£ s. d.
Rolled Steel Joists, ordinary sections	5 15 0	...	6 15 0
Compound Girders, ordinary sections	7 12 6	...	8 15 0
Angles, Tees and Channels, ordinary sections	7 7 6	...	8 7 6
Flitch Plates	7 15 0	...	8 5 0
Cast Iron Columns and Stanchions including ordinary patterns	6 12 6	...	7 15 0

METALS.

	Per ton, in London £ s. d.		£ s. d.
IRON— Common Bars	6 15 0	...	7 5
Staffordshire Crown Bars, good merchant quality	7 5 0	...	7 15 0
Staffordshire "Marked Bars"	9 10 0	...	—
Mild Steel Bars	8 5 0	...	8 15 0
Hoop Iron, basis price	8 15 0	...	9 0 0
" " Galvanized	16 10 0	...	—

(*And upwards, according to size and gauge.)

Sheet Iron, Black— Ordinary sizes to 20 g.	9 0 0	...	—
" " 24 g.	10 0 0	...	—
" " 26 g.	11 15 0	...	—
Sheet Iron, Galvanised, flat, ordinary quality— Ordinary sizes—6 ft. by 2 ft. to 3 ft. to 20 g.	12 0 0	...	—
Ordinary sizes to 22 g. and 24 g.	12 10 0	...	—
" " 26 g.	13 10 0	...	—
Sheet Iron, Galvanised, flat, best quality— Ordinary sizes to 20 g.	15 0 0	...	—
" " 22 g. and 24 g.	15 10 0	...	—
" " 26 g.	17 0 0	...	—
Galvanised Corrugated Sheets— Ordinary sizes 6 ft. to 8 ft. 20 g.	12 0 0	...	—
" " 22 g. and 24 g.	12 10 0	...	—
" " 26 g.	13 5 0	...	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	11 0 0	...	—
Best Soft Steel Sheets, 22 g. & 24 g.	12 0 0	...	—
" " " 26 g.	13 5 0	...	—
Cut nails, 3 in. to 6 in.	8 10 0	...	9 0 0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Per ton, in London. £ s. d.		£ s. d.
LEAD—Sheet, English, 3lb. and up	15 7 6	...	—
Pipe in coils	15 17 6	...	—
Soil pipe	18 7 6	...	—
Compo pipe	18 7 6	...	—
ZINC—Sheet— Vieille Montagne ....ton	28 0 0	...	—
Silesian	27 15 0	...	—

PRICES CURRENT.—*Continued on page 505.*

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

COMPETITION.

Nature of Work.	By whom Required.	Premiums.	Designs to be Delivered
*New Police and Fire Brigade Stations	City & County of Bristol Watch Com.	Not stated	No date.

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tenders, etc., supplied by	Tenders to be Delivered
Repairs to Nos. 1-24, Knott's-terrace, Tanner's-hill	Deptford Borough Council	T. Corfield, Borough Surveyor, 493, New Cross-road, S.E.	Nov. 14
Repairs to No. 47, Tanner's-hill	do.	do.	do.
Steam Boiler for Whitfield-street Baths, W.....	St. Pancras Borough Council	H. T. Richards, Town Hall, Pancras-road, N.W.	do.
Painting Corporation Properties	Carlisle Corporation	H. C. Marks, City Engineer, 36, Fisher-street, Carlisle.....	do.
Two Houses, Machen	.....	F. G. Webb, Architect, Lower Machen.....	do.
Hire of 12-Ton Steam Roller	Springhead U.D.C.	M. Clerke, Surveyor, Springhead, Oldham	do.
Street Works, Copperfield-street, etc.	Blackburn Highways Committee ..	W. Stubbs, Borough Engineer, Municipal Offices, Blackburn	do.
Reconstruction of Premises, Queen-street, Amble ..	Messrs. Akeroyd & Hume	W. Burton, 69, Queen-street, Alnwick	do.
Twenty 100-ft. Clear Deck Spans	Rohilkund and Kumaon Rly. Co. ..	E. L. Marryat, 237, Gresham House, Old Broad-street, London, E.C.	Nov. 15
Alterations to Board Room, Eastgate Workhouse ..	Worksop Guardians	T. Webster, Architect, Newcastle-avenue, Worksop	do.
Rain-water Cistern, etc., at Kilton Hill Infirmary ..	do.	do.	do.
Fence Wall, Kilton Hill Infirmary	do.	do.	do.
Public Hall, New Mill, Keith, N.B.	.....	Mr. Johnston, The Schoolhouse, Keith.....	do.
Lecture Hall, Strand Pres. Church, Sydenham, Belfast	.....	J. Fraser & Son, Engineers & Architects, 117, Victoria-st., Belfast	do.
Retorts, Firebricks, etc., at Gasworks	Chorley Corporation	J. W. Allin, Gas Engineer, Chorley	do.
100 Cast-Iron Pipes, 3 ins. diameter	do.	do.	do.
Sewerage Works, Bridge-street, Wentworth-place, etc.	Wicklow U.D.C.	Town Hall, Wicklow.....	do.
Clinker Crushing Plt., Destructor Wks., Parkview-rd.	Tottenham U.D.C.	W. H. Prescott, Engineer, 712, High-road, Tottenham.....	do.
Recreation Ground, etc., Caerphilly	Caerphilly U.D.C.	A. O. Harpur, Surveyor, Council Offices, Caerphilly	do.
Two Dwelling Houses, Embsay, near Skipton.....	Messrs. Smith & Stephenson	H. Varley, Architect, Skipton.....	do.
Road Material.....	Sheerness U.D.C.	T. F. Berry, Surveyor, Council Offices, Trinity-rd., Sheerness....	do.
Eight-stall Urinal, Military-row, Portsea	Portsmouth Corporation	Borough Engineer, Town Hall, Portsmouth	do.
Repairs, etc., to Hartshead Farm	Ashton-under-Lyne, etc., Hos. Board	J. Lowe, Sanitary Surveyor, Health Depart., Ashton-under-Lyne	do.
Extra High Tension Feeder Mains	Hammersmith Borough Council....	G. Gilbert Bell, Electricity Works, 57, Fulham Palace-road, W.	Nov. 16
Draw Boxes, Frames, Covers, etc.	do.	do.	do.
Motors, Cables, and Blast Fan.....	East Indian Railway Co.	C. W. Young, Secretary, Nicholas-lane, London, E.C.	do.
Wheels, etc., for Colliery Trucks.....	do.	do.	do.
Colliery Tubs	do.	do.	do.
980 yds. of 9-in. Stoneware Sewer, Chart-la., Brasted	Sevenoaks R.D.C.....	T. Hennell, Engineer, Parliament-mansions, Victoria-street, S.W.	do.
Materials	Herne Bay U.D.C.	Surveyor, Council Offices, Town Hall, Herne Bay	do.
Street Works, Shakespeare-avenue, etc.	Birkenhead Corporation	C. Brownridge, Borough Engineer, Town Hall, Birkenhead.....	do.
Road Materials	Margate Corporation	E. A. Borg, Borough Surveyor, Margate	do.
Paving Material	Poplar Borough Council	H. Heckford, Borough Surv., Council Offices, High-st., Poplar, E.	do.
Firemen's Quarters, Charnley-road, etc.	Blackpool Corporation.....	J. S. Brodie, Borough Engineer, Town Hall, Blackpool	do.
720 yds. of 3-in. Cast-Iron Mains at Henstridge	.....	C. Combes, Engineer, Tisbury.....	Nov. 17
Branch Store and Houses, Sheldon-la., East Ardsley	Morley Industrial Co-op. Soc., Ltd.	R. Castle & Son, Archs., London City & Mid. Bk.-chbrs., Cleckheaton	do.
Trees for Street Planting	Southend-on-Sea Corporation.....	E. J. Elford, Borough Engineer, Southend-on-Sea.....	do.
Workshop, Lossie Wynd	Mr. J. Youngson	C. C. Doig, Architect, Elgin	do.
Stables, Entrance Gateway, etc., Kendal	Mr. J. W. Fothergill, J.P.	J. Bintley, 7, Lowther-street, Kendal	do.
Premises at Keady, co. Armagh	Northern Banking Co., Ltd.	W. H. Stephens & Sons, Surveyors, Donegall-sq. North, Belfast	Nov. 18
*Steel Bridge over the Kennet at Thatcham, etc.....	Berks County Council	County Surveyor, Broadway-buildings, Reading.....	do.
*New Coastguard Buildings at Uxon, Forfar	Admiralty	Supting. Engr., H.M. Naval Estab., Rosyth, Inverkeithing, N.B.	do.
*New Coastguard Buildings at Freeston, Lincoln	do.	Admiralty Office, 21, Northumberland-avenue, W.C.	do.
3,000 yds. of Canvas Hose	Manchester Fire Brigade Committee	W. H. Talbot, Town Hall, Manchester	Nov. 19
Fireclay Retorts, etc.....	Leeds Corporation.....	R. H. Townsley, Gas Office, East-parade, Leeds	do.
Steam Boiler at Infectious Diseases Hospital	Dewsbury Joint Hospital Board ..	Holtom & Fox, Architects, Corporation-street, Dewsbury.....	do.
Sluice Keeper's Hse., West Bangour Farm, nr. Uphall	Edinburgh District Lunacy Board..	J. & A. Leslie & Reid, Engineers, 72A, George-street, Edinburgh	do.
One Mile of Railway, etc., at Gavieside, nr. W. Calder	Young's Paraffin Light, etc., Co., Ld.	D. & G. R. Rankine, Engineers, 238, West George-street, Glasgow	Nov. 21
School Buildings (Contract No. 1), Llandudno.....	Conway with Lland. Local Gov. Bdy.	G. A. Humphreys, Architect, Llandudno	do.
Tramway Depôt, Collins-street, Wakefield-road	Bradford Corporation	F. E. P. Edwards, City Architect, Brewery-street, Bradford	do.
Stores	Caledonian Railway Co.	J. Lorimer, Caledonian Railway, Charles-street, St. Rollox, Glasgow	do.
Relief Station & Officer's Hse., Cranmer-rd., Mitcham	Croydon Guardians	Chart, Sons, & Reading, Archs., Union Bank Chambers, Croydon..	do.
Two Workmen's Dwellings, Port Tennant	Swansea Harbour Trust	J. Thomas, Architect, 32, Fisher-street, Swansea	Nov. 22
Lake Works, Northwood Park, Hanley	Hanley Corporation	J. Lobley, Borough Engineer, Town Hall, Hanley.....	do.
Private Street Works, The Grove, etc.	Finchley U.D.C.	Surveyor, Council Offices, Church End, Finchley	do.
Furnishing Public Offices, Mountain Ash	Mountain Ash U.D.C.	Surveyor to Council, Public Offices, Mountain Ash	do.
Electric Overhead Travelling Cranes	Manchester Tramways Committee..	J. M. M'Elroy, Tramways Department, 55, Piccadilly, Manchester	do.
*Underground Sanitary Convenience, Plaistow	C.B. of West Ham	Borough Engineer, Town Hall, West Ham, E.	do.
Six Miles of Pipe Sewers, etc.	Hayward's Heath U.D.C.	Baldwin Latham, Eng., Parliament-mansions, Victoria-street, S.W.	Nov. 23
Alnwick Hill Filters, etc.	Edinburgh & District Water Trustees	W. A. Tait, C.E., 72A, George-street, Edinburgh	do.
*Norwegian Granite Edge Kerb	Wanstead U.D.C.	Surveyors' Department, Council Offices, Wanstead, N.E.....	do.
*Erection of Kitchen at Casual Wards	Lambeth Guardians	Guardians' Offices, Brook-street, Kennington-road, S.E.	do.
Street Paving	Gateshead Corporation	N. P. Pattinson, Borough Engineer, Town Hall, Gateshead.....	Nov. 24
Sewerage of Acock's-green, South-east	Yardley R.D.C.....	A. W. Smith, Engineer, Council House, Sparkhill, nr. Birmingham	do.
Cole Hall Sewage Works	do.	do.	do.
Road Material.....	Warwickshire County Council	J. Willmot, County Surveyor, Birmingham	do.
*Erection of Southfield-road School, Bedford Park ..	Acton U.D. Education Committee	E. C. P. & H. Monson, Grosvenor House, Acton Vale, W.	do.
Stores	Cheshire Lines Committee	S. Saxon Barton, Stores Supt., Cheshire Lines, Warrington	Nov. 25
Laying, etc., Asphalte Pavements, etc.....	Worcester Corporation.....	T. Caink, City Engineer, Guildhall, Worcester	do.
*New Royal Naval Reserve Establishment at Lowestoft	Admiralty	Works Department, Admiralty, 21, Northumberland-avenue, W.C.	do.
*New Coastguard Building at Peel, Isle of Man	do.	do.	do.
*New Coastguard Building at St. Peters, Lincoln	do.	do.	do.
*New Coastguard Building at Ingoldmells, Lincoln ..	do.	do.	do.
House at Crawfordsburn	Col. Sharman-Crawford	S. C. Hunter, Scottish Provident-buildings, Belfast	do.
Sewerage Works	Fleetwood U.D.C.....	G. R. Strachan, Engineer, 9, Victoria-street, Westminster	Nov. 26
Free Library, Reading-rooms, etc.....	Sowerby Bridge U.D.C.	Engineer, Hollings Mill-lane, Sowerby Bridge.....	do.
Glazed Stoneware Sanitary Pipes (N. Disposal Wks.)	Harrogate Corporation	E. W. Dixon, Engineer, 1A, Cambridge-crescent, Harrogate	do.
Improvem'ts to Schl. Offices, Burnham Westgate Schl.	Norfolk Education Committee	Rev. E. Kynaston, Burnham Market, Norfolk	do.
Street Works, Edward-street, Manselton	Swansea Corporation	Borough Surveyor, 13, Somerset-place, Swansea.....	Nov. 29
Stoneware Sewers (Branksome Drainage)	Branksome U.D.C.	J. Taylor, Sons, & Santo Crimp, Engineers, 27, Gt. George-st., S.W.	Nov. 30
Cast-Iron Sewers (Branksome Drainage, Contract 1)	do.	do.	do.
Stores (Cardiff firms only)	Cardiff Corporation	C. H. Priestley, Waterworks Engineer, Town Hall, Cardiff	Dec. 1
Lead Service Work (Cardiff firms only).....	do.	do.	do.
Jobbing Masons' Work	do.	do.	do.
Street Surface Covers.....	do.	do.	do.
*New House at Greenock	Admiralty	Director of Works Depart., 21, Northumberland-avenue, W.C.	Dec. 2
Direct-Acting Steam Duplex Pump.....	Essex County Asylum, Brentwood	Medical Superintendent at the Asylum.....	Dec. 3
Six Motor Vehicles for Omnibus Service	Cambrian Railway Co.	H. E. Jones, Locomotive Superintendent, Oswestry	do.
Boilers, Machinery, Heating, etc., Handsworth	Handsworth U.D.C.	J. P. Osborne, F.R.I.B.A., 25, Colmore-row, Birmingham	Dec. 5
*Public Baths, etc., in Grove-lane	do.	do.	do.
*Alterations to Cann Hall-road Schools	Leyton D.C. Education Committee	W. Jacques, Architect, 2, Fen-court, Fenchurch-street, E.C.	Dec. 6
*Building of Water Tower	East Cowes U.D.C. (Isle of Wight)	Council's Surveyor, Town Hall, East Cowes	Dec. 7
*New Engine House, etc.	do.	do.	do.
*Engine Suction and Gas Plant.....	do.	do.	do.
*6-in. Mains from Waterworks to Tower	do.	do.	do.
*Taking-out and Refixing Old Pumps	do.	do.	do.
*Set of 8-in. 3-Throw Deep Well Pumps, etc.....	do.	do.	do.
*Tramway Offices in Chingford-road	do.	do.	do.
Sewage, etc., Works	Walthamstow U.D.C.	Council's Engineer, Town Hall, Walthamstow	Dec. 13
Steam Buoy Vessel	Chippenham U.D.C.....	A. E. Adams, Engineer, High-street, Chippenham, Wilts.....	Dec. 29
	Rangoon Port Trust.....	Ogilvy, Gillanders, & Co., Sun-court, 67, Cornhill, London	

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be delivered
Wes. Sun. Sch., etc., Cross Flats, Dewsbury-rd., Leeds	.....	Danby & Simpson, Architects, 73, Albion-street, Leeds	No date.
Premises, North-street, Leeds	.....	J. Kendall & Son, Architects, 10, East-parade, Leeds	do.
Additions to National Schools, Langenhoe	Lexden and Winstree Adv. Sub-Com.	Baker & May, Architects, Head-street, Colchester	do.
Coach-house in Brook-lane, Felixstowe	Mr. W. G. Clarke	H. W. Buxton, Arch., Bank-corner, 26, Hamilton-rd., Felixstowe	do.
One 10-Ton Overhead Travelling Rope-driven Crane	Avonside Engine Co.	E. W. Walker, Bristol	do.
Two Hand-driven Walking Jib Cranes	do.	do.	do.
One Hydraulic Jib Riveting Crane	do.	do.	do.
Terrace Houses at Ripponden	.....	J. Crawshaw, Architect, Eccleshill, Bradford	do.
Lifting & Removing Newcastle Water Co's. Tramway	.....	Resident Manager, Catcleugh, Otterburn, R.S.O.	do.
House, High-lane, Ridgeway, near Killamarsh	Mr. P. Martin, sen.	E. Allsopp, Architect, Worksop	do.
Two Brick Semi-Detached Villas	.....	Captain Jones, 5, North-road, Aberayron	do.
Rebuild. Dick's Boot Warehouse, 70, High-st., Exeter	G. & W. Morton	J. A. Lucas, Architect, Guildhall-chambers, Exeter	do.
Removal of 3,000 Cubic yds. of Rubble	.....	Bristol Wagon, etc., Co., Ltd., Lawrence-hill, Bristol	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in
*Foreman of Roads	Southern Nigeria P.W.D.	250*l.* per annum, etc.	Nov. 21

Those marked with an asterisk (*) are advertised in this Number. *Competitions*, iv. *Contracts*, iv. vi. viii. x. *Public Appointments*, xix

PRICES CURRENT.—*Continued from page 503.*

LEAD, &c. (*continued*—

		Per ton, in London. £ s. d.	£ s. d.
COPPER—			
Strong Sheet	per lb.	0 0 10 ...	—
Thin ,,	,,	0 0 11 ...	—
Copper nails	,,	0 0 10 ...	—
BRASS—			
Strong Sheet	,,	0 0 9½ ...	—
Thin ,,	,,	0 0 10 ...	—
TIN—English Ingots	,,	0 1 3½ ...	—
SOLDER—Plumbers'	,,	0 0 6½ ...	—
Tinmen's	,,	0 0 8 ...	—
Blowpipe	,,	0 0 9 ...	—

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2½d. per ft. delivered.
,, fourths	3d. ,, ,,
21 oz. thirds	3½d. ,, ,,
,, fourths	3d. ,, ,,
26 oz. thirds	4½d. ,, ,,
,, fourths	3½d. ,, ,,
32 oz. thirds	5½d. ,, ,,
,, fourths	5d. ,, ,,
Fluted Sheet, 15 oz.	3½d. ,, ,,
,, 21 oz.	4½d. ,, ,,
¼ Hartley's Rolled Plate	2d. ,, ,,
⅜ ,, ,, ,,	2½d. ,, ,,
½ ,, ,, ,,	2½d. ,, ,,

OILS, &c.		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 1 5
,, ,, ,, in barrels	,,	0 1 6
,, ,, ,, in drums	,,	0 1 8
Boiled ,, ,, in pipes	,,	0 1 7
,, ,, ,, in barrels	,,	0 1 8
,, ,, ,, in drums	,,	0 1 10
Turpentine, in barrels	,,	0 3 4
,, in drums	,,	0 3 6
Genuine Ground English White Lead	per ton	19 5 0
Red Lead, Dry	,,	18 15 0
Best Linseed Oil Putty	per cwt.	0 6 6
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 19s. per annum (52 numbers) PREPAID. To all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, &c., 26s. per annum. Remittances (payable to J. MORGAN) should be addressed to the Publisher of "THE BUILDER," Catherine-street, W.C.

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TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

BATTLE.—For drainage works, Battle-hill, for the Urban District Council. Mr. A. Dray, Engineer, Town Hall-chambers, Hastings:—

W. L. Wallis & Co., Eastbourne £1,456 5 6

BOGNOR.—For steelwork for covering in sewage tanks, for the Urban District Council. Mr. O. A. Bridges, Surveyor, Council Offices, Bognor:—

Workington Engineering & Wagon Co.	£167 2 6	A. D. Dawnay & Sons, Ltd.	£119 19 8
Boulton & Paul	152 0 0	Baxendale Bros.	115 0 0
Rubery & Co...	150 0 0	W. Walton....	112 15 0
Heenan & Froneis, Ltd.	146 0 0	F. Bird & Co..	107 0 0
Barry Transporter & Engineering Co.	139 0 0	Drew, Bear, Perks, & Co.	107 0 0
J. Every.....	133 17 6	J. Booth.....	106 8 9
W. Lucy & Co., Ltd.....	130 0 0	Marchant Bros.	104 0 0
R. Moreland & Son, Ltd....	130 0 0	Jukes, Coulson, Stokes, & Co., 11-12, Clement's-lane, E.C.*	102 10 0
Measures Bros., Ltd.....	128 15 0	Rowlingson & Co.	102 0 0
J. Westwood & Co., Ltd.....	121 0 0	G. Thompson & Co.	94 10 0
W. A. Baker & Co., Ltd....	120 0 0		

D. H. Mortimer ..... £9 19s. 6d. per ton.

DINAS POWIS.—For erecting a small masonry bridge, for the Llandaff and Dinas Powis Rural District Council. Mr. J. Holden, engineer, 20, Park-place, Cardiff:—

For Masonry and Fixing Ironwork.

H. Fraser	£187 8 6	W. Rees	£119 12 9
Meazey & Son	136 6 0	J. Britton, Dina Powis, Cardiff*....	106 10 2
F. Ashley	135 2 6		
C. Davies	120 2 6		

For Supplying Ironwork.

C. F. Dewdney	£95	W. Baker & Co., Newport, Mon.*	£80

DUNMOW (Essex).—For the erection of an isolation hospital, with administrative block, offices, fencing, etc., at Dunmow, in the county of Essex, for the Dunmow District Council. Messrs. C. & W. H. Pertwee, architects, Chelmsford, Essex. Quantities by Messrs. R. L. Curtis & Sons:—

Martin, Wells, & Co.	£5,000 0 0	T. A. Goodey	£4,360 0 0
Smith & Son	4,745 0 0	W. Winch ..	4,349 0 0
Oak Building Co.	4,680 0 0	F. C. Thurman	4,328 14 0
Dowsing & Davis	4,670 0 0	W. Roberts..	4,304 0 8
Brown & Son	4,640 0 0	Mason & Son	4,295 0 0
F. & E. Davey	4,532 0 0	J. McKay ..	4,197 0 0
E. Dix.....	4,498 0 0	F.W.Burtwell	4,112 0 0
Banyard & Son	4,397 10 0	S. A. Kenney	4,085 0 0
Laurence & Son	4,394 0 0	T. Almond & Son	4,050 0 0
Coulson & Lofts	4,372 0 0	J. G. Cowell	4,030 0 0
		Grimwood & Son	3,998 10 0
		Parren & Son, Erith†	3,952 13 6

GRAVESEND.—For erecting a public library in Windmill-street, for the Town Council. Mr. E. J. Bennett, architect, 191, Parrock-street, Gravesend:—

A. E. Tong, Darnley-road, Gravesend .. £5,316 11

HENGOED.—For erecting two shops and twenty houses, for the Sunny Bank Cottage Co., Ltd. Mr. G. A. Treharne, engineer and architect, 18, Canon-street, Aberdare:—

D. Raymond, 14, Taff-embankment, Cardiff ..... £196 per house.

HOUGHTON-LE-SPRING.—For street works (Thornhill-street, Violet-street, Wallace-street, etc.), for the Urban District Council. Mr. J. W. Holbrook, Surveyor to Council, Houghton-le-Spring. Quantities by Surveyor:—

M. P. Balmer & Sons	£913 12 0	W. Proudlock & Co.	£544 2 10
G. E. Simpson	693 3 1	MacLaren & Co.....	498 2 11
W. Craig	677 9 7	J. MacLaren & Co., Gosforth*	445 5 6
J. W. White..	593 10 0		

[Surveyor's estimate, £548 5s. 10d.]

LLANDUDNO.—For extension of Trinity-street, for the Urban District Council. Mr. E. P. Stephenson, Engineer and Surveyor, Town Hall, Llandudno:—

G. Roberts & Bro.	£2,417 0 0	W. Davies ..	£1,753 16 7
F. Harrop ..	2,296 15 1	G. Reed & Son	1,680 0 0
G. A. Watson & Co.....	2,257 17 1	R. L. Roberts, Contractor, Llandudno*	1,663 9 6
R. Williams & Son	2,134 16 9	F. Mitchell & Son	1,600 0 0
Hughes & Rowlands..	1,864 15 3		

LONDON.—For paving works in High-road, Chiswick. Mr. J. Barclay, Engineer and Surveyor, Town Hall, Chiswick, W.:—

Woodham & Sons	£618 0 0	Wimpey & Co.	£516 0 0
London & County Builders	587 18 3	Harvey Bros...	488 4 2
Public Works Co.	560 0 3	Swaker & Co., Whitton* ..	479 8 0
		C. R. Gurr & Sons	—

LONDON.—For covered playshed, Rushmore-road, Hackney, for the Education Committee of the London County Council:—

G. Barker	£228 10	J. Grover & Son	£204 0
Turnbull & Son..	220 0	McCormick & Sons	198 0
A. J. Sheffield ..	215 0	Vigor & Co.....	192 0
F. Bull	211 0	J. T. Robey, 194, Bow-road*	185 0
Barrett & Power	207 0		

LONDON BOARD OF EDUCATION TENDERS.

Hackney, S., Rushmore-road (Covered Playshed).

G. Barker	£228 10	J. Grover & Son	£204 0
Turnbull & Son..	220 0	McCormick & Sons	198 0
A. J. Sheffield ..	215 0	Vigor & Co.	192 0
F. Bull.....	211 0	J. T. Robey, 194, Bow-road*	185 0
Barrett & Power	207 0		

"Shaftesbury" Training Ship (New Boiler).

That expenditure not exceeding 370*l.* be sanctioned for providing and fixing a new semi-portable loco-type boiler, 20-h.p. nominal, on the training ship *Shaftesbury*, moored off Grays, Essex, in accordance with the specification prepared by the chief engineer; and that tenders be invited from Messrs. Robey, of Lincoln, Messrs. Marshall, of Gainsborough, and Messrs. Davey, Paxman, & Co., of Colchester, for executing this work.

London County Council School of Marine Engineering, Poplar (initial equipment and furnishing of the class-rooms, offices, physical and chemical laboratories, and lecture theatre).

H. Bouneau*	£283 5 11
London School Furniture Co.* ..	72 10 0
Bartlett & Son*	17 0 0
Angus & Co.*	26 15 9
Shoolbred & Co.*	15 12 6
	£415 4 2

LONDON.—For electric light installation, at the new sub-station in course of erection in Burdett-road, E., for the London County Council:—

L. Sunderland & Co.	£147	0	
O. Clark & Co.	145	0	
G. Weston & Sons	139	10	
A. H. Marshall & Co.	138	10	
F. J. Coleby & Co.	137	10	
Durell & Co.	131	13	
Donnison, Sillem, & Co.	£130	0	
W. H. Johnson	125	5	
National Electric Construction Co., Ltd., 34, Victoria-street, S.W.*	124	15	

NETHERNE.—For the superstructure of the Netherne Asylum, for the Visiting Committee of the Surrey County Council. Messrs. George T. Rine & Co., architects, Westminster. Quantities by Mr. L. A. Francis, 8, John-street, Adelphi, W.C.:—

Knight, Kirk, & Co.	£266,760	!	
J. Mowlem & Co.	261,539		
G. Trollope & Sons, and Colls & Sons	258,000		
Holland & Hannen	241,292		
Foster & Dicksee	239,932		
H. Holloway	238,565		
J. Howe & Co.	£238,196		
Holliday & Greenwood	233,444		
H. Lovatt	229,302		
W. Moss & Sons	226,580		
H. Willcock & Co.	226,260		
C. Wall	223,626		
J. Bowen & Sons, Birmingham*	219,797	!	

OXFORD.—For erecting eight cottages in Henry-road, for the Co-operative Society. Mr. W. M. Gray, architect. Quantities not supplied:—

G. Money & Son‡	£3,467		
J. Simms & Son	2,300		
Ox. Co-op. Builders	2,300		
Organ Bros.	2,200		
G. Inness & Son	£2,180		
J. Wooldridge, Frenchay-road*	2,099		
E. Kimber & Son	1,960		

‡ Two estimates inclusive. Four houses and eight cottages.

OXFORD.—For erecting four houses on the Batley-road, for the Co-operative Society. Mr. W. M. Gray, architect. Quantities not supplied:—

G. Money & Son‡	£3,467		
Oxford Co-operative Builders	1,400		
J. Simms & Son	1,360		
J. Wooldridge, Frenchay-road*	£1,244		
G. Inness & Son	1,240		
Organ Bros.	1,230		
E. Kimber & Son	1,080		

‡ Four houses and eight cottages inclusive.

PRESTON.—For new County Court office:—

A. White & Sons	£2,630	19	11
W. Whiteside	2,300	0	0
J. Cartmell & Sons	2,250	15	0
J. Walmsley	2,200	0	0
J. Christian	2,153	0	0
Pius & Baines	£2,075	0	0
T. N. Livesey	2,040	11	8
T. Croft & Sons, Ltd.	1,972	0	0
D. Tullis & Sons*	1,960	0	0

RICHMOND (Surrey).—For erecting a new board-room and offices at Parkshot, for the Guardians. Mr. E. J. Partridge, architect, Bank-chambers, Richmond:—

W. J. & A. Long	£7,240	0	
Potter Bros.	6,498	0	
J. W. Brooking	6,373	0	
Martin, Wells, & Co., Ltd.	6,300	0	
W. Wallis	6,247	0	
R. T. Hughes & Co., Ltd.	6,120	0	
W. J. Renshaw	6,046	0	
Thomas & Edge	5,997	0	
The General Builders, Ltd.	5,997	0	
S. N. Soole & Son	5,990	0	
W. Johnson & Co., Ltd.	£5,984	0	
Wisdom Bros.	5,928	0	
Spencer, Santo, & Co., Ltd.	5,900	0	
J. & M. Patrick	5,753	0	
Foster Bros.	5,745	10	
B. E. Nightingale	5,665	0	
Speechley & Smith*	5,625	0	
Kerridge & Shaw	5,598	0	
G. H. Gibson	5,469	0	

SHEFFIELD.—For erecting classrooms, etc., at the Carbrook Council School, for the Education Committee. Mr. H. L. Paterson, architect, 19, St. James's-street, Sheffield:—

Henry Boot & Son, Sheffield* £2,903 0 0

New Infant School, Greave-street, Walkley, Sheffield.

T. Roper & Son, Sheffield* £6,418 5 10

SANDAL MAGNA.—For kerbing works and pipes and gullies, Sandal Magna, near Wakefield, for the Urban District Council. Mr. F. Massie, F.S.I., Council Offices, Sandal:—

Flags.

Threlkeld Granite Co., Keswick, Cumberland* £197 5 0

Gullies.

Fotherby & Co., Anchor Foundry, Wakefield* 8 18 6

Earthenware Pipes.

Naylor Bros., Denby Dale, near Huddersfield* 26 9 5

Setts.

T. Kendall, Ltd., Shipley* 23 6 8

Setts and Kerbing.

Farrars, Ltd., Brighouse* 179 3 1

TEMPO (Ireland).—For erecting a parochial hall:—

Plain Stone.

J. Bloomfield, Brookeborough, co. Fermanagh £215

TRURO.—For 750 tons of road metalling, for the City Council. Mr. Measham Lea, City Surveyor, Truro:—

		Per ton. s. d.
St. Keverne Stone Co., Porthowstock*	500 tons at	6 9
J. Leverton, St. Erme*	200 ,,	5 10
J. Higgins, Truro*	100 ,,	6 0
J. Runnalls & Sons	—	8 3

WHITCHURCH.—For erecting a small masonry bridge, for the Llandaff and Dinas Powis Rural District Council. Mr. J. Holden, engineer, 20, Park-place, Cardiff:—

For Masonry and Fixing Ironwork.

H. Fraser	£195	5	6
W. Cox	187	6	0
J. Ashley	157	15	3
C. Osmond & Son	135	3	0
C. Williams, Tynant, Whitchurch, Glam.*	£121	12	10

For Ironwork.

G. F. Dewdney	£130	W. Baker & Co., Newport, Mon.*	£100

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